The Builder.

VOL. XLI. No. 2078. SATURDAY, OCTOBER 8, 1881.

ILLUSTRATIONS.

Interior of the Church of St. Sophia, Constantinople (Double-page Engraving) 432
The Tomb of Prince John, Westminster Abbey 454
The Holloway College, Mount Lee, Egham, Surrey: North-east Entrance to Students' Stairs, from East Quadrangle (Double-page Engraving).—Mr. W. H. Crossland, Architect 456, 457
Oatlands School, for Walton-on-Thames School Board.—Mr. Rowland Plumbe, Architect 459

CONTENTS.

The New Egyptian Rooms in the British Museum 441
St. Sophia 443
Artistic Prospects of the Modern Renaissance 444
Hampton Court and Versailles 445
The Present Condition and Hopes of Architecture 446
Sanitation in Ancient Rome 448
The Roman Camp of Bonna on the Rhine 449
The Holloway College, Egham, Surrey 449
The Tomb of Prince John 450
Oatlands School, for Walton-on-Thames School Board 450
The Social Science Congress in Dublin: The President's Address 452
On the Refining and Humanising Influences of Art: Persepolitan and Roman Periods 454
The Bristol and Clifton Junior Architects' Society 454
Lincoln's Inn Chapel 454
The Fish Market Question 455
Rosewood 455
An Elastic Lacquer 455
New Bank Buildings at Brixton 455
Ecclesiastical Art Exhibition at Newcastle 456
Birmingham 456
A Reclamation: Mr. Beer's Mausoleum 456
Surveyorship Items 456
Patent Record 457
Competitions 457
On the Use of the Word "Nature" in Reference to Art 457
Vergers and Cathedrals 458
A Walk in Kent 458
"A Victory over Sewer Gas" 464
The Late Mr. E. C. Sayer 469
Case under the Building Act 469
Building By-Laws: Buildings for Railway Purposes 469
Provincial News 469
Hydraulic Difficulties 469
Church Building News 470
Dissenting Church Building News 470
Stained Glass 471
Variorum 471
Miscellanea 471

The New Egyptian Rooms in the British Museum.

THE removal of the splendid collections of mineralogical and palæontological specimens from the British Museum buildings at Bloomsbury to the new edifice which is designated the "British Museum (Natural History)" at South Kensington, liberated a large superficies of floor and wall space at the former building. This enabled the authorities at once to take steps for the commencement of the new system of arrangement of antiquities which, when complete, will comprehend not only all the antiquarian relics in the Museum, but those also which are still preserved at the Christy Museum in Victoria-street. The whole of the northern gallery has thus been apportioned to new undertakings. The Egyptian and Assyrian studies are now placed more commodiously at the north-west corners; then comes a room, which formerly held the palæontological relics, now devoted to a display of Etruscan sarcophagi, terra-cottas, and fictilia, of which we hope to give an account at some future time; then more to the eastward, two large rooms, filled with the collection of the smaller Egyptian objects; these rooms are bounded to the east by temporary zoological studies, and at the extreme eastern corner by a refreshment-room. The larger and heavier objects of Egyptian history and art, that is, the stone remains and some cases of statuettes and architectural fragments, remain in the Egyptian gallery on the ground floor.

It is of the contents of these two new Egyptian rooms in the northern gallery that it is proposed to point out, on the present occasion, some of the salient points of arrangement and intrinsic interest. These Egyptian antiquities have been principally acquired from collectors or by purchases at public sales. The principal of these acquisitions are the collection of the well-known traveller, Mr. Salt, purchased by the trustees in 1821; a smaller collection of choice objects presented by the late Sir J. Gardner Wilkinson, in 1834; purchases selected at the sale of the Barker collection in 1835, and of the Sams' collection in the same year; the sale of the objects brought to England by the equally celebrated African traveller, Mr. Burton, in 1836; of Signor Anastasi in 1839, and again in 1857; of the Oriental writer, Mr. Lane, in 1842, and of the Earl of Belmore in 1843; a selection of the extensive Hay collection, gathered by Mr. Robert Hay, of Linplum, N.B., during his private but important expedition to Egypt and Nubia, about the year 1826, in company with several artists and antiquaries; and numerous antiquities of a very miscellaneous but not less valuable character purchased and presented by the Rev. Greville Chester, a not unfrequent sojourner in the land watered by the Nile.

In the arrangement of the two rooms which hold all these invaluable relics an instructive classification has been adopted. The first or westernmost room, which is entered by the visitor by turning to the left, immediately on reaching the head of the north-east staircase, situate at the end of the Egyptian gallery on the ground-floor, comprises objects of religious, military, and domestic life, while the second, or inner room, more to the eastward, is devoted to the vast number of relics connected with the dead. Thus we are enabled to see, almost at a glance, the two great phases of evolution which Egyptian art embraced,—national products and necessities of a progressing civilisation in the one room, the bias of funereal *cultus*, and the whole sepulchral art in the other. Great diversity of opinion still prevails, and we fear is likely to prevail, on the subject of Egyptian chronology; indeed, to so impracticable a deadlock have the lucubrations of some writers reduced the chronology of Egyptian history that the most prominent Egyptologists, both in England and abroad, have abandoned this branch of study to lecturers and dilettanti, and directed their attention more to the elucidation of the philological aspects of the language and literature, and to the decipherment of inscriptions and papyri, than to the strict arrangement of reigns, and to the confused pedigrees of the ancient members of the dynastic families. Hence, throughout the collection in the British Museum, wisely, no attempt is made to assign the older objects to a fixed date, but only to the intervals of time marked by the dynasties which successively reigned over Egypt. The locality, however, from which the individual objects come, has been indicated, if known, upon a descriptive label.

Taking the cases in the first room, in order of their numeration, Nos. 1–12 are filled with the objects of the Pantheon or Religious World,—sacred figures of gods and animals. In this section the silver and bronze objects are principally votive offerings which have been attached to the walls of temples and found under the pavements; the hard stone objects are either pendants of necklaces,—a favourite personal ornament with the race,—or small votive figures; the porcelain objects come from the networks with which mummies have been enveloped, or from necklaces clasped around the necks of the departed, these being selected and incorporated into the Pantheon without reference to the purpose to which they were applied, but simply as illustrating the religious cult of the nation. The religions consisted of an extensive polytheism represented by a series of local triad groups. The idea of a single deity, self-existing or self-produced, was involved in the conception of some of the principal gods who are said to have given birth to or produced inferior gods, men, all beings, and all things. Some of the deities were considered to be self-produced. The Sun was the older object of worship, here, as in many other countries; and, as the rising, midday, or setting orb, was invested with different names and propitiated with varying forms of reverence. But the oldest of all the local deities was the Memphian Ptah, the demiurgos or creator of the heavens, earth, gods, and men, and not identified with the sun. Besides the worship of the solar gods, that of Osiris prevailed extensively, and with it, the antagonism of Set, the Egyptian Satan; and the tenets of a transmigration of the soul, a future judgment, purgatory or Hades, the *karneter* or hall of the gods, the *Aahlu*, or elysian fields, and final reunion of soul to body after the lapse of æons, all find illustration in the objects of this class. And, as in other mythological systems, besides the deities of heaven, the light, and the lower world, other inferior personages presided over the elements and operations of nature, the seasons, and events. Most, however, of the important gods were solar, representing various epochs in the path of that luminary either above or below the earth. It is interesting also to note the triadic grouping of deities according to their locality. Thus, at Memphis the triad consisted of Ptah, his consort Merienptah, and their son Nefer Tum; at Abydos, Osiris, Isis, and Horus, with Nephthys sometimes added; at Thebes, Amen-Ra or Ammon, Mut, and Chons, with Neith occasionally added, and so on. When these religions grew debased from admixture of foreign myths, Bel or Baal, Astarte, Ken, and Respu, were adopted from Semitic sources. At this later time, too, a triple classification of gods seems to have been admitted. Some of the types of the Pantheon are wanting, and some are exceedingly rare; but the British Museum collection will contrast favourably with those at Paris, Berlin, Turin, Boulaq, and other national museums. The nature of the material used for different deities is very instructive: thus Osiris is usually in bronze, very rarely in porcelain; Shu, the Egyptian Hercules, and Taur, the wife of Typhon, a mystical goddess, composed of the hippopotamus, crocodile, and lion, are, on the other hand, rarely, if ever, found in bronze. The silver figure of Amen-Ra, as a man, walking, and formerly covered with thick gold leaf,—a Theban relic,—is of great value and rarity; the golden figure of Chons, seated with the moon's disk on his head, and the golden Athor, the celestial mother, with the sun's disk, another Theban treasure, are worthy of especial admiration in this class. The bronzes are very numerous, and there are four interesting porcelain figures of "Ptah Socharis-Osiris,"

the Pataikos of Memphis according to Herodotus. Another rare object is a figure of Isis, in gilded bronze, the goddess being represented seated in the act of giving suck to the infant Horus, whose figure is broken off. This goddess was the wife of Osiris, and her soul was believed to be enshrined in Sothis, the Dog-star, the heliacal rising of which played an important part in the Egyptian calendar.

Case 13 contains a number of votive statues and statuettes; the smaller objects have rings by which they were suspended to walls of temples. Many of these, no doubt, were intended to represent portraits of defunct persons, in the costume and style of the class or period to which they belonged. Carved wooden figures of considerable artistic merit have been found belonging to a period as old as the fourth dynasty. On the pedestals are dedications to different deities. The woods used were ebony, cedar, acacia, and sycamore, the first-mentioned being harder and more costly; the commoner examples are coloured to hide the coarseness of the grain. No. 14 has a selection of objects of furniture, which in the Egyptian household consisted chiefly of richly inlaid bedsteads or couches, wooden head-rests, foot-stools, tables, chairs, and boxes. For inlaying, ivory, glass-pastes, parquetry, and other vehicles were employed; feather cushions, panther-skins, mats of fibre, and other light furniture supplied the wants of the Egyptian householder. The next twelve cases, Nos. 15-26, contain principally vases of different forms, and made of various materials. Stone of several sorts was used for making bowls, jugs, and other forms destined to hold the liquid or solid offerings to the gods or otherwise employed for religious or domestic purposes. Granite, basalt, serpentine, and alabaster or arragonite, a kind of stalagmite of a creamy white colour of great beauty, opaque and occasionally zoned or banded, were favourite substances, and there are many choice examples of these in the national collection. On many alabaster vases is inscribed the name of the monarch in whose reign they were made, as well as of the person in whose tomb they were deposited, and even the measure of their capacity or their dedication to sepulchral uses. These alabaster vases were highly prized, and used for domestic purposes by the richer classes alone. They were even exported from Egypt, and the names of Persian monarchs are found in hieroglyphics upon them. Asia Minor, Greece, and the Isles of the Archipelago occasionally yield, to the explorer of tombs of early date, vases of Egyptian material, if not of Egyptian manufacture. Nos. 27 and 28 contain bronze vessels, and food, fruits, and seeds. The use of bronze vases from the earliest time is sufficiently demonstrated by the discovery of statuettes, weapons, and vessels, with inscriptions upon them, as old as the sixth Egyptian dynasty, that is, about two thousand years before Christ, according to one school of historians, or nearly four thousand according to another school. The shapes are various: jugs, ewers with long spouts, washing-basins in form of the flower of a water-plant, small jugs, cauldrons with two rings holding a loose-looped handle like a modern pail, *situlæ* or buckets, and drinking-vessels of many patterns, occur in this division. They are, as a general rule, remarkably well made, and in good preservation, the material in this respect being very durable. In this division there is also a bronze votive table, or model, inscribed with the name of a priest; upon it are several small model figures of ewers, basins, jugs, plates, and a colander. This is attributed, in point of date, to the remote period of the sixth dynasty, a time of which, curiously enough, there are more memorials preserved in European museums than of succeeding dynasties. As to food substances, Sir Gardner Wilkinson, who has done more than any one else to illustrate the manners and customs of Egyptian life, discusses this branch of his subject at considerable length. Oxen, calves, goats, antelopes, the ibex and leucoryx, and even hyena, were eaten. The sheep, however, is not found. Equally remarkable, too, is the absence of the domestic fowl from the list of birds used at table, while we find various kinds of water-fowl, geese, ducks, cranes, and pigeons commonly in use. The various species of Nile fish, forbidden to, or rather rejected by, the priests as unclean, were, notwithstanding, eaten by some, and either salted or preserved, or eaten fresh. Of these viands, few remains of meat have been discovered, but in the Museum collection are several specimens of bread, fruits, seeds, fish, and a duck prepared for eating, placed upon a small stand. Of the fruit and seeds, we have cakes of barley bread, sometimes in fancy shapes like modern pastry, grapes, figs, dates, pomegranates, olives, cucumbers, onions, and the esculent root of papyrus. Milk, wine, and beer also formed items of the Egyptian commissariat, and some of the wall-paintings of the Theban tombs,—reproduced in many illustrated works on Egyptian manners,—testify to the way in which drinking to excess was practised at the banquet.

The next case, 29, contains arms and implements, weapons and staves, or walking-sticks. The cultivation of the land was carried on by the plough, hoe, and wooden pickaxe, water for the important necessity of irrigation being raised from a well by a long pole on a pivot, or in jars. The use of the sickle also is found. Among the objects in this division are wooden hoes and pickaxes, an iron sickle from Thebes, and a yoke for the carriage of water-buckets. The stick or wand was carried by private persons, and with a short stick the punishment of the bastinado was administered to culprits; several of these, in wood, ebony, bronze, and other materials, are in this division. There is also the head of a papyrus sceptre or stick, composed of felspar. The principal weapons are the bow and arrow, the war-axe, the mace or club, and the short sword or dagger. For defence, the shield of leather, breast-plates armed with metal scales, and hardened crocodile-hide. The cutting edges of weapons are of bronze, the use of which appeared first in Egypt in the time of Psammetichus I., when the Carians and others, allies and mercenaries, first came to Egypt with such armour; and it is doubtful if the use of iron was known in Egypt at an early period. But the natives must have had some method of so hardening their bronze (which contains about 94 parts copper, 5·9 tin, 0·1 iron) that they were enabled to cut and smooth some of the hardest kinds of granite, porphyry, and other rocks and stone. Fishing implements, such as bronze harpoon-heads, wooden boomerangs, or throwing sticks, used with deadly precision against the waterfowl in the papyrus thickets; and instruments for writing and painting, follow next in order. In these cases, among other fine objects, attention may be drawn to a bronze knife, with a handle of onyx; daggers, with handles of gold, silver, ivory, and bronze; cakes of painters' colours; palettes, with various inscriptions; and a leather bag holding razors. Writing materials consisted of the palette; inkstands of alabaster, with oval or cartouche-shaped depressions or wells for red and black ink, for the titles of chapters in the papyri were written in red ink, as in our own Mediæval manuscripts; reeds for writing; and small cups or vases to contain pigments. The principal colours employed to illustrate writings, or to ornament small objects, are red and yellow ochre, blue and green tints of oxides of copper, white plaster, and animal or bone black, suspended in a gum, probably the common gum-arabic. Painters' slabs and mullers are by no means uncommon.

We will complete the account in our next.

ST. SOPHIA.

In more than one respect the great church founded by Justinian at Constantinople upwards of thirteen centuries ago may be considered to be one of the most typical buildings in the world. Regarded from a purely architectural point of view, it is the great example of the domed style, the finest of all styles for interior effect, carried out in a complete and homogeneous manner. It is also the most marked illustration of the employment of architecture purely as a source of interior effect. In this respect, in regard to the degree in which exterior and interior effect respectively, has been consulted, the leading architectural styles of the world are very various in their principle and practice. In some, internal and external effect seem to be about equally balanced, as in the Mediæval cathedrals. In some great buildings, such as St. Peter's, there is practically a failure in effect externally which was not intended, which resulted from the mistakes of some of the architects concerned. In modern Western architecture we not unfrequently find the whole of the architectural effect external, and the interior of the building merely arranged for practical purposes, as in many of our town-halls and municipal buildings. This extreme is the one peculiar to Western architecture, as the opposite extreme is peculiar to Eastern architecture. In the domestic architecture of the East, we find that dwellings of the richest and most sumptuous decoration internally present not a feature externally, a fact which has been sometimes taken as indicative of the social selfishness and isolation of Eastern life. But the great church at Constantinople stands as a solitary example of the erection of a building on the largest scale and of the most magnificent internal effect, in which external architecture is absolutely wanting, and no attempt seems to have been made to render the exterior anything beyond a rough shell to protect the precious kernel of the interior. Even the evidence of design arising from good construction is wanting. Immense masses of matter have been piled up outside in what, even from an engineering point of view must be called the rudest manner, to hold up by their sheer weight and *vis inertiæ* the beautiful internal construction,—masses which are absolutely unsightly, and the work of which might have been done by half the materials scientifically arranged, and of course with infinitely better effect. Yet, entering within this misshapen mass, we find one of the most complete pieces of masonic construction, and one of the most effective and gorgeous interiors, which architecture has ever produced, and we may look all over the world without finding any other example of such a contrast between the outward promise and the interior result. In another respect, too, St. Sophia occupies an exceptional position, as the chief link between the Classic and the Gothic schools in regard to architectural detail, the centre from which radiated the beautiful types of carved ornament, in the shape more especially of capitals, which were to be modified and worked out in France into the more delicate and logical forms of the complete Gothic capital. In this respect the influence of St. Sophia has differed very much in regard to general design as compared with detail. In general design, internally, it was the culmination, the complete working-out of the domical system first suggested by the Romans; and hardly anything so complete in this respect has been achieved since. In detail, on the other hand, it was still tentative, and was a *point de départ* rather than a culmination. To add to its other points of singular interest, St. Sophia has had the remarkable fate of having been built for the celebration of the most characteristic and strongly defined form of Christian ritual, and of having been transformed into the principal home of the ritual of the strongest and most uncompromising rival of the Christian religion.

It is a question to be asked, in regard to the extraordinary discrepancy between the exterior and interior effects of St. Sophia, whether Justinian or his architect in reality intended the exterior to be finished at some future time, just as the façades of the Italian churches were often left to be finished by future generations; whether the original founder adopted the idea of getting a grand interior for the performance of the ritual at once, leaving the less important construction of the exterior out of consideration for the time? It would have been more possible to gain some idea about this from the actual study of the exterior before it was restored under the direction of Fossati in 1847 and the following year. He so far altered and renewed the exterior surfaces of a considerable part of the building that it can no longer furnish much evidence in the matter; and perhaps it never could have furnished this. But it seems to us very improbable that any man who had shown such ambition to produce a gorgeous interior should have been entirely indifferent about the exterior effect, and we lean to the impression that the exterior was never regarded as complete.

It is a common misapprehension to regard the church as dedicated to some special "Saint Sophia" of the calendar, a view which our usual way of translating the dedicatory title of the church serves to foster. But, literally, the church is dedicated not to any individual "saint" in the ordinary sense, but to "Sacred Wisdom," as opposed to the profane wisdom of which the goddess Minerva was the type. The recollection of this is not insignificant when we regard the general architectural style of the church; its large open area, its abundant light, seem quite opposed to the mysticism and gloom which subsequently gave the keynote to the aspect of the buildings of Mediæval Christianity; and such an effect is in accordance with the wider and grander idea suggested by the dedication. In regard to the form of plan adopted, we want the links which would enable us to connect it with its originating forms. The real history of the plan and section of St. Sophia is con-

nected, there can hardly be a doubt, with the Etruscan forms of architecture which so largely influenced the Romans, and the results of which, as far as that people were concerned, culminated in the Pantheon. It is probable that a good many Eastern churches between this and St. Sophia perished by fire, owing to the extensive use of wood made in their construction. We have St. George at Thessalonica as an early specimen, in which the plan of the building, with the circular form showing itself on the exterior, and the section of the dome, bear a very considerable resemblance to the Pantheon, with the difference, however, that the dome form is not shown externally, but is covered by a wooden roof, the outer walls being carried considerably above the springing of the dome. Mr. Fergusson classifies this as "Eastern Romanesque," a title which comprehensively expresses the historic relation of such a building. He assumes that it was erected by Christians, at about the approximate date of A.D. 400. The next known specimen after this, the church of SS. Sergius and Bacchus at Constantinople, brings us to Justinian himself, and may be regarded as a kind of trial on a small scale of the architectural scheme of St. Sophia; not that it was so intentionally, but under the circumstances, after the burning of Constantine's original St. Sophia, it might very well have been so regarded. Like the Pantheon, it exhibits the dome externally, and shows the tendency to the flatter section of dome which was afterwards adopted in the great church; and in plan it exhibits the principal characteristics of St. Sophia in a simple form; the square surrounding the dome, and the galleries and two-storied narthex. The main difference in St. Sophia is the lengthening out of the central space from a square to an oblong by the bold and happy introduction of the semi-domes from which the great dome springs, and which gives to the interior a unity of constructive effect such as hardly any other domed church possesses. In fact, the practical elements of architecture are as remarkably displayed in the interior as its æsthetic elements, and it is noticeable that, the rebuilding of the church having been rendered necessary in the first instance by the burning of the previous basilica, it was made a *sine qua non* by Justinian that it should be built exclusively of non-combustible materials, so that St. Sophia takes rank as the first fire-proof structure we know of that was intentionally so built. All the records of the construction of the building are indeed creditable not only to the ambition but to the practical good sense of the man who called it into existence, and boasted (probably quite within the mark) that he had surpassed Solomon.

In speaking of the historic position of the building in architecture, we may observe that recently a writer in *L'Art*, M. Léon Hugonnet, has started a somewhat fanciful theory in regard to the supposed influence of Egyptian upon Byzantine architecture. The architecture of Justinian, he says, seems to him to be *"l'architecture Egyptienne rentrée dans l'architecture grecque"*; and he traces this assumed fact to the influences of the solitary saints of the Thebaïd, whose opinions governed the Christian world, and who introduced or recommended the introduction into Christian architecture of the forms they were familiar with in Egypt. It does not appear to us that this theory has more claim to serious consideration than a good many others which have been developed by French theorists on architecture, who have a great tendency to construct architectural relationships and theories of this kind out of their inner consciousness. That there is a connexion to be traced all the way back from the Gothic column to the Egyptian is true enough, but certainly the immediate connexion of Byzantine detail is with Greece and Rome, and the immediate connexion of its general scheme of building is with Rome. The only partial countenance that may seem to be given by St. Sophia to this Egyptian theory is in the battering of the lines of the masses of the external walls and counterforts; but considering how nervously anxious Justinian and his architects obviously were in regard to the stability of the building, from the way they piled mountains of buttresses against it, the idea of buttressing might have been sufficient to lead to this adoption of sloping lines, without any hints from Egypt or from the hermit saints, who we should imagine were about the last people to give much attention to architecture: and at all events, this portion of the building is architecturally the least important of all. Any critic who can trace direct Egyptian influence in the interior must, we should imagine, be very strongly biassed by a preconceived theory.

We have observed that the detail of St. Sophia was dependent on Greece as well as Rome, and it is curious that in the treatment of the carved capitals there is in many cases a much closer approximation to Greek feeling and forms than to Roman, and at the same time that the method of using, reproducing, and modifying these forms is, as we shall have occasion to observe, exceedingly capricious, even in contiguous parts of the same building. Some of the preliminary forms of capital a century earlier than St. Sophia are to be found in the basilican church of St. John at Constantinople, where there are capitals with a distinctly Roman or Classic outline, but with foliage assuming a tendency towards what were afterwards known as Byzantine forms. In some of the St. Sophia capitals, on the other hand, there seems to be a mingling of the old and new element in an opposite manner: the general forms of some of the capitals are Byzantine; for instance, they are longer in proportion, straighter lined, and less elegant than the Greek and Roman types of Corinthian capital on which they are founded, but the foliage bears a stronger resemblance to the Greek acanthus than to the Roman, and in some cases may fairly be said to be superior to either in its treatment, and the combination it exhibits of flowing line with sharp and crisp character and outline.

The transition of the building from being a Christian church to becoming a Mahommedan mosque took place in 1453, under the sultanship of Mohammed II., who built the first of the four minarets of curiously mongrel style, which now mark the four angles of the building externally, the one at the south east angle. Rather more than a century later Selim II. built the north-east minaret, and his successor, Amurath III., built the two at the western angles, adding also a great deal to the external buttressing, with well-meant but clumsy solicitude for the security of the structure. The building, however, towards modern times, was gradually sinking into a somewhat dilapidated and precarious state, and in 1847 the then sultan called in the architect Fossati to superintend a thorough repair of the building. Fossati, fortunately for himself, lived before the existence of a society for the protection of ancient buildings, under whose *régime* the Church of Sacred Wisdom would probably, by this time, be level with the ground. As far as regards the interior he seems to have used good judgment; there may be some question as to his treatment of the exterior. He found the church with many sinkings in the large dome arising from settlements in the substructure or in the buttresses, and not a few of the interior columns dangerously out of the perpendicular from the same cause,—in one or two cases columns which bear integral parts of the structure. All these were brought back to the vertical position except one, the handling of which was interfered with by the proximity and pressure of one of the minarets and its base and buttress. Portions of the large buttresses were rebuilt or re-cased, but the flying buttresses from them to the lowest ring of the great dome, which cut very awkwardly into the lines of the dome, were removed, and an iron chain put round the base of the dome instead. The lead over all the cupolas and other roofs was repaired or renewed. The surfaces of the great buttresses were finished up with a kind of imitation of coursed rusticated work in cement, and they were given also a new finish at the apex, a kind of semicircular saddleback with a circular ornament inserted in the front of the buttress, concentric with the lines of the capping. Fossati has preserved the original appearance of the exterior before he touched it in what purports to be an accurate view; and it must be admitted that in the building as it was previously there was a distinctly Oriental appearance which harmonised with its history and surroundings, and that the hand of the Western architect is somewhat too manifest in the external appearance as Fossati has left it. In the interior the ancient splendour was altogether dimmed. The inlays were dull with time, and the mosaics had been covered over with layers of plaster and other coverings to hide from the eyes of the faithful the idolatrous figures which they contained. This fact is perhaps a tribute to the permanent character of mosaic work, for it may be presumed that the Mussulman enthusiasts would have destroyed the mosaics altogether if they could easily have done so. Fossati, discovering accidentally the presence of some mosaic figures under the plaster in the vault of the north-west angle of the aisle, had other portions of the vaults uncovered, and it was then seen that the whole had been sumptuously decorated with gold mosaic, the gilding and ornaments on which were now renewed, while the obnoxious figures were ingeniously obliterated by powdering which could at any time be easily removed should the building pass into other hands, or should the followers of the Prophet relax their rule in regard to figures. In the same way there were found on the wall of the outer porch, over the door leading into the narthex, portraits in mosaic of Constantine and Justinian, and these have been covered again with a lightly-painted ornament in quasi-Arabic style, which at once conceals and protects them. The building thus came out in something like its old splendour so far as colour effect was concerned; and the furniture was renewed in a sumptuous manner. The effect of this cannot be well realised in an engraving; the gilt chandeliers, for instance, stand out in reality with great brightness in the total effect, while neither that nor the effect of the mosaic can be conveyed in black and white; but the illustration* gives correctly the grouping and effect of the architectural details (of which a word more just now) and of the principal objects in the building, which, indeed, are not many; the simplicity of Mahommedan worship having its advantage from an architectural point of view in this way at least, that it leaves opportunity for a large extent of open and unencumbered floor space, nothing being needed for the majority of the worshippers beyond a spread of carpets over the floor to kneel on. The octagonal erection on the left of the view is what in English would be called the Sultan's pew, which is also a sumptuous erection covered with gilding, and surrounded to the greater part of its height by rich tracery, which avails to hide the royal worshipper from the view of the people, though leaving him with a full view of everything. It need hardly be observed that this is a modern addition. Two remarks may be made, before quitting this part of the subject, in regard to the effect exercised by Mahommedan arrangements and furniture on the interior of the building. One of these arises from the fact that the building, not having been built as a mosque, does not front towards Mecca. The Mahommedan conquerors could not alter the orientation of the building; but as your true Mussulman always prays kneeling or standing on a mat or carpet, it occurred to them to right the matter by arranging the carpets in reference to Mecca, and at right angles with the true Mahommedan orientation, so as to run in oblique lines across the floor. This method being religiously carried out in every part of the building, and arresting the eye at once, gives an idea of the whole structure having been built askew; but, though a rather provoking effect architecturally, the incident is so interesting in its associations and suggestions that perhaps no one would wish it otherwise. The other point is a very different incident, too prominent in every view of the interior, namely, the hideous effect of the great circular panels, with texts from the Koran inscribed upon them in colossal characters, which are painfully conspicuous in our view of the interior. They cut up the architecture most cruelly, and greatly injure the scale of the building; and it is a marked instance of the essentially Puritan character (except in one particular) of the Mahommedan faith, that it exhibits so strongly in this case that absolute indifference to artistic effect as compared with spiritual and moral enlightenment, which is one of the leading characteristics of all Puritanism.

Running over, in conclusion, some of the points in the architectural scheme of the building, we are struck with the curious mingling of Classic with Christian associations in the architecture of this once Christian temple. We enter the narthex, at the south end, through a porch with an almost purely Classical cornice, Roman in style, and through a door of bronze in an almost pure Greek style, evidently brought from some Pagan shrine. The shafts of the columns in one corner come, so tradition has it, from some disused temple at Ephesus; in another we find reputed spoils from Baalbec, in some cases various-sized drums of shafts joined by metal rings. In the arcades on the upper story over the central part of the nave, we have the front row of columns, those which form the screen

* See p. 432.

visible from the body of the church, with quasi-Corinthian capitals, retaining very much the general outline and character of the Corinthian capital, only with smaller volutes and somewhat different type of foliage. Immediately behind these, the columns which carry the springers of the vaulting have a compound capital, consisting of the straight-lined carved block peculiar to Byzantine architecture mounted on an almost pure Roman Ionic capital. Everywhere there is this curious transformation of old forms, or mingling of old details with new combinations, proclaiming that architecture was at this time entering, or preparing to enter, on a new path.

Going back for a moment to the door between the entrance-porch and the narthex, mentioned before, we find in the simple yet rich architecture of the narthex another application of Classic forms. Here the supports are massive square pilasters, with a capital in three stages, which somewhat suggests the idea of a portion of a Classic architrave, with its crown moulding and its two facets, only all elaborately carved. This is, at least, far better than the Roman idea of twisting the whole members of an entablature round the top of a column. The roof is a simple quadripartite vault; a domical roofing would have been more completely in keeping with the character of the main portion of the building. The treatment of the angles of the plan, with their screen of columns arranged in a quadrant separating them from the main area, is most happy, both above and below; it includes something of the real poetry of architecture, giving at each turn a new view of the structure,—a new perspective effect. This would strike even the unlearned spectator, but the architect derives still greater pleasure from the beautiful and architecturally truthful treatment of the great piers and the interspaces between them; the piers are almost unbroken solid masses, only diversified by inlay; the arcades between filling up what is constructionally a void in the most appropriate and graceful manner, giving breadth and unity to the whole while clearly defining the supports of the building. The advantage in the way of internal effect, from the low pitch of the dome, which enables the eye to take in at once and appreciate its real size, has been often remarked on and contrasted with the less satisfactory internal effect of the loftier dome of the great Latin cathedral; but not so often has the peculiarly beautiful lighting of the dome been commented on, the manner in which light has been poured in through what is the heaviest part of the section of the dome, yet without obliterating the appearance of constructive security. The whole idea of the treatment and roofing of the great central compartment is one of the most noble architectural conceptions that has ever been carried out, and the interior is not less remarkable for its grandeur as a whole than for its picturesqueness in detail, and the interest and beauty of its decoration.

ARTISTIC PROSPECTS OF THE MODERN RENAISSANCE.

Beneath the briefest introspective glance of a generation too feverishly emulous of advance to linger upon any subject whatever, the fact of a present certain human moil must become sufficiently luminous: a moil that, being material, moral, intellectual, and imaginative, can be covered by the most comprehensive epithet alone.

Not that the age has gone mad; far from it: yet does it evince a want of rest and coherence that should, speculatively, affect its departmental functions. Art, in her various phases, must peculiarly suffer; for while Science goes with judicial imperturbability straight for his mark, accepting rebuffs with fortitude, wishing to see nothing but the sparkling grain of truth at the bottom of his crucible; she is the enchantress who loves to spread her gorgeous skeins of fancy around her, developing at leisure the woof that is to take captive the minds of men with the novelty of a creation. The renaissance in progress is, indeed, as distinguished from the earlier period of literary and artistic revival, expansive rather than consecutive, affecting the entire body social. Thus, political problems are enlarging their spheres of activity, while science and dogmatic theology, like armed powers keeping to the neutral zone and equally prepared to fight as fraternise, seem awaiting an umpire.

Such, however, is the marvellous fruitage of inductive science, that the field of inquiry is kept crowded with ill-assorted wonders, and a spirit of tentative compromise which aims at patching current theories rather than launching new ones, is the rule.

Our forefathers, whether of the past century or the past cycle, might project their minds into the most grotesque regions of thought without being challenged. We cannot afford that. The front files of the on-coming future tread so closely upon the heels of the present that the dread of exposure is greater than our greed for notoriety, and, ceasing to theorise, we too often cease to classify. Speaking the truth was what our forefathers had chiefly to fear. Not so we. We need not, indeed, recant a sincere conviction, adding the stealthy reservation *e pur muove*. Ours is an epoch when heroes might flourish; but the fear of ridicule, more potent than the rack, keeps in the bounds of decorum, if not of mediocrity, us of whom Science, the athlete, has a lead of many lengths.

Using the term "Renaissance" in the limited sense we are accustomed to attach to it, we can, without absolutely forgetting the flood of social turbulence which is bearing us along with it, contrast current aspects of thought with those obtaining at the earlier historical period. The Renaissance of history was a new birth of art and of letters, yet by no means so abruptly defined as we are apt to imagine. Latent in cloister and cell, the embers of a new culture smouldered long before they burst into flame. A Venerable Bede, a Chaucer, not inadequately represented two of the Muses. Ireland was but declining from her brief zenith of native civilisation. But, until the invention of printing, learning could not become popular, for pontifical Catholicity failed to do what the ancient States, with their profound reverence for Nature, did. Christianity had triumphed, but over much that was excellent as well as over much that was hateful. The Roman had his pride of citizenship and his possible apotheosis; the Athenian, his sympathetic union with Nature's mysterious legion of gods and forces; but the Christian layman of what we term the Dark Ages was not encouraged to assert the superiority of the human soul within him, being kept within conservative channels of inquiry by the clerics, lest worse might befal him. When, however, Faust and Guttenberg, together with others, had completed their modest plan for the diffusion of learning, Mind unfolded into a beauteous flower, which was the logical sequence of the bud that the Church had so long pruned and tended.

Faith was to the intellect of the Renaissance what the worship of nature and of power was to the ancients,—the nucleus around which gathered all the accretions of learning.

Art quickly ran through its invariable course of development: architecture, poetry, painting, and music. The former had reached much excellence, as our old abbeys remain to show; yet the genius of no Michelangelo had been enlisted, either in the grander walks of architecture, or in the embellishment of cathedrals with frescoes and with carving. If it be in the nature of things that architecture takes precedence of the other arts in point of time, it is equally true that she embodies the leading principle of the day. The vastness of Assyrian and Egyptian designs, the chasteness of the Grecian Orders, the dignity of the Roman works, the ornate effeminacy of the Aztec temples, are distinctive of race and sentiment. The Roman arch, too, if a comparatively late idea, need not be mistaken for the Saxon one which resembles it, still less for the Norman. Mediæval church architecture, largely as its prevalent form, the Gothic, has borrowed from Saracenic models, is characteristic and strongly typed, a fact that it needs no skilled architect to discover. Viewing one of those old buildings, one feels that each part has its meaning, and that an ardent central idea has taken to itself flesh of stone and mortar. It is not thus with the architecture of our times. It is not that our modern Renaissance lacks vigour; but that no vivid idea lies at its centre; still more, that bases of research are shifting from day to day, and human opinion shifting with them: the light that we have is dazzling, but comes through no one channel; diffusive and evanescent, it offers no background of shadow for purposes of contrast. Perhaps, if one half the kingdom were depopulated and conserved for Patagonian savages, while our bishops made their *autos da fé* of our literature and of our scientists in the squares, we might, between awe for Mother Church and the perverse human instinct to prove its superiority over its neighbours, develop both a faith and a genius. It must not be overlooked, however, that the spirit of liberty, which was a suckling once, is a giant now, and rebellion against the paternal hand which used to keep thought in its channels, might destroy the parallel. Though art may be the loser, we prefer to make, each, his points and his failures on his separate account.

Progress is the motto of our age, but so rapid is its march that, throwing away its *impedimenta* as irksome, it is now and then astounded to find that it recognises neither itself nor its surroundings. The old distinction of gases, liquids and solids is known to be fallacious, while certain gases are coming to be considered as metals.

The so-called imponderables, again, have undergone a vast change in estimation. Our regard for law leads us to shun the theory of the existence of matter exempt from the property of gravity, while the "correlation of forces" puts a fresh aspect upon molecular possibilities. This correlation is becoming intensified into a true "conversion" of forces, and the alchemist's dream of the transmutation of metals is moving into line with other possibilities once more. Chemical nomenclature is so altered that Dalton, Cavendish, even Faraday, the latest of the great fraternity, would, if living, have to discard much, and re-arrange more. Subject to incessant eliminations, the intellectual field that comes under review of any one life is necessarily vague, circumscribed, and out of apparent consecutive dependence upon preceding lines of investigation. The scientist himself may reject errors intelligently, and carry human knowledge to a higher stage, but, to numbers, this want of fixity gives irresolution, and to none more than to followers of the arts, whose knowledge is less critical than their sympathies are expansive.

Want of certainty of touch either causes timidity in conception and weakness in execution, or inflates with the prurient immodesty of shallow thought simulating genius. In architecture, gaudy effect usurps well-balanced design. Scientific aids of drainage, lighting, and heating are, though loudly professed, poorly invoked. When anything more than a pretence, they are seldom decently subordinated to the plan. Invention lags, so that posterity will not be able to point with confidence to representative specimens of Victorian architecture: adaptation is our servile climax.

No doubt we are better housed, clad, and fed, than our forefathers, and that is much. We also are popularising knowledge with a view to awakening a national interest for art. Nor can it be concealed that we are struggling to regain, in very many departments, the forgotten secrets of ancient excellence. With our art schools, and other propaganda of the day, we may hope to develop public taste up to the level of its capacities, and these means have been unexpectedly fertile already in refining or educing the lower functions of taste. Our more solid triumphs may be to come, but are they likely to be as glorious as those of the Renaissance of history? This interesting question can only be conjecturally answered, but the chances are that the Renaissance which has begun in our day will not, itself, develop a high order of genius in any artistic department, but that its reaction will. Our age is scattering more seed, than it is garnering in the harvest. Scientific research has been busily promulgating facts which our successors must arrange.

Law is hinted as likely to underlie this or that, but no clear consensus of laws has been discovered, while the mind of this century, fevered and worn, is ill-adapted to condense from the chaotic sum of facts before it a vivid and coherent cosmogony replete with human feeling, such as is demanded of high art. The social state reacts upon the individual: a man is a unit now, a cog in a great machine; labour is departmental and perfunctory. As regards literature, it is not food for thought that people seek, but devices for obviating thought's necessity. Fictional writing is, in the main, flimsy and meretricious,—emotional phases of character being preferred to the deeper discoveries of the great masters. Even this tendency towards character-portrayal is, since George Eliot's death, left without a high exemplar. The poetry of the period is mandlin and insincere; the drama, composed either of adaptations of French plays, or of sensational figments too powerfully concentrated to have literary value, and touching none of the nobler qualities inherent to human nature. If there be a characteristic that more than any other belongs to modern imagina-

tive thought, it is a vague vastness relieved only by its complement: petty frivolity. The former tone has its advantages, the latter, none. The first may be the *nimbus*, containing the germ of a new mental and moral birth,—climax of the Renaissance in progress; the other is a common mark of unsettled purpose.

We are selfish, living more for ourselves and less for posterity than our predecessors. Reverting for a moment to architecture, it is true the Thames Embankment and kindred works will stand, evidences of engineering skill, yet with no pretensions to character beyond those of vastness and utility; but the railways, the telegraph lines, the gas and water systems, our great city itself, are for the living; our legacy is one of ideas alone.

We have built no universities in our day, but we have the gigantic School Board system; no cathedrals, but tabernacles and rotundas to spare, all of which will come down and, possibly, be renewed, while Westminster Abbey waxes hoarier and more firmly knit.

Where the grand vagueness which is the characteristic of our public architecture under its best manifestation has no scope, the frivolity of the contained idea is often painfully evident.

In the domain of verse, Tennyson is massive, but unsymmetrical; quaint, yet devoid of humour. Browning, for inharmonious energy, is unique. Swinburne, melodious as are his numbers, lives in a world apart from ours. Had circumstances favoured, he must have been a representative poet, but he turns from it in despair, to hold commune with Eros in Arcadian groves.

If we turn to painting, we see a spurious sentimentality usurping the place of legitimate human feeling. The desire to achieve sublimity is there, but the power is wanting. Realism is aspired to, but honest work of flesh and form is slurred. As is the case when Art lacks force, weak allegory is used to cover defects. "Suggestiveness" is, also, an artistic excellence much aimed at, a favourite subject being the juvenile figure and a member of the brute creation. Let it be a child and a dog. Contrast is, here, between beings of diverse species, Nature's distinction, not the artist's.

Music, the capital of the graceful column of the arts, partakes of the vagaries of the modern "æstheticism" which is common to those already touched upon. That which has been termed the "music of the future," as especially implying the Wagnerian school, is really the music of to-day. Vague, mystic, inchoate, it grasps at the ideal it cannot seize, scorning the limits within which the great masters of melody found it necessary to confine their genius. As for our popular melodies, they are remarkable in not possessing melody at all: lacking a core, our tumultuous renaissance runs its sentiment to waste. We cannot turn backward the wheels of progress, and may not, amidst the distractions of a nervously hurried material existence, look for a revival of that glow of heroic enthusiasm with which Mediæval thought, then young, and fresh, and simple, slipped the leash in which it had been confined, but where it had gained strength and sincerity. Our hope is that the reaction from all the oppressive materialism and uncandid sentiment that clog the art of to-day may intensify; that humanity may, by scientist, artist, and poet, whether of word or of tone, be reinstated as lord over the blind forces of nature, instead of being widely regarded as but an inferior force, without the dignity that belongs to human personality.

The Church preached the close union between divine and human; we may hold up man's sublimity as remodeller of the Natural Arcanum, when, no longer a football at the mercy of the Fates, as was the ancient conception, nor the vehicle of miracle, as was the theory of the monks, man may be seen to move freely and intelligently among the elements, as deputed lord.

The apotheosis of our great men of science need not follow, for our temple should be bathed in the white, cold light that kills credulity. We lack the spark of self-respect which underlies all excellence; humanity must feel itself ennobled, and the arts, seizing upon the idea, will weave around it with mathematical accuracy the web of contemporary thought and revised scientific teaching. The renaissance will, under such a reaction, prove one of classical purity as well as of unexampled vigour.

The Savoy Theatre.—The opening of this theatre, described by us a fortnight ago, is postponed until Monday evening next, in order to perfect the electric-lighting arrangements.

HAMPTON COURT AND VERSAILLES.

As in so many other cases, it is perhaps owing to its literary celebrity,—a celebrity that is made for it by French writers,—that Versailles is so much more famous than Hampton Court. What Englishman, what stranger, considers his visit to Paris complete without having passed at least a day at Versailles,—if he may not see the fountains play, at least to wander through the interminable apartments of the huge palace?—but how many visitors are there to London who leave our shores without having considered it necessary to spend a day,—an afternoon, indeed, is sufficient,—at Hampton Court Palace? And yet, looked at impartially, Hampton Court is more interesting, or should be so, than Versailles. If comparison were necessary from their historical and artistic interest, it would be much more the deserted palace of Fontainebleau than Versailles that Hampton Court might be said to resemble, though old John Evelyn remarked, now more than 200 years ago, that Fontainebleau "was nothing so stately and uniform as Hampton Court" (March 7, 1644). At the time that Evelyn visited Fontainebleau, the site of the yet unbuilt palace of Versailles was a sandy, unhealthy plain. Fontainebleau lies some twenty-four miles or so from Paris, while Versailles and Hampton Court stand nearer to their capitals, the former ten miles from Paris, the latter fifteen miles from London.

Though it cannot be said of Hampton Court, as it can of Versailles, that from the moment of its completion it has been a royal residence, the annals of Hampton Court are closely connected with the lives of more than one of our kings and queens; but its modest proportions, while long affording ample accommodation to our English ideas of regal splendour, cannot certainly be said to vie with those of the recklessly-erected acres of Louis XIV.'s hobby. Happily, for the memory of our rulers, no blot exists in the story of the creation of Hampton Court such as stains the early annals of Versailles. When Wolsey determined to build the palace he was so soon to give to his royal master, he expressly sought the most healthy spot to be found near London, and he fixed on Hampton Court; but no such precautions did Louis XIV. use when, a century later, he determined on Versailles as the site of his future residence.

The story of the Aladdin palace which Louis XIV. called up from the unhealthy desert of Versailles is familiar to every reader of French history, and at what cruel expense of life the hobby was at length carried out, contemporary writers bear sufficient evidence. Thousands of workmen and soldiers were employed to bring water to the sandy plain, and the "Letters of Mdme. de Sévigné" and the "Memoirs of Mdme. de Lafayette" tell us of the terrible effect produced by the miasma exhaled by the freshly-disturbed earth; every night, carts filled with the dead defiled silently along the road. One of the most eloquent of the chapters in the "Memoirs of Saint-Simon" is devoted to an attack on the creation of Versailles. Delightful St. Germains, long the pleasant home of the court (Louis XIV. was born at St. Germains, where, in later years, he was to lodge our English "Pretender"), he had determined to leave; tradition says, because the distant view of the cathedral of St. Denis, the burial-place of the French kings, disturbed his "immortal" grandeur. If Skelton, in some measure the Saint-Simon of Henry VIII.'s reign, has satirised in his biting lines the erection by Wolsey of so regal a residence as Hampton Court, his accusations are but the witty expression of the envy which Stow tells us was excited at court by the cardinal's magnificence. There is nothing analogous to the simple narration by contemporaries of the facts connected with "that cruel folly, that Versailles of Louis XIV.,—that master-piece, so ruinous and in such bad taste,—where whole changes of forests and water have buried so much gold."

What Versailles cost will probably never be known; it has even been said that Louis XIV., frightened at the terrible cost, burnt all the registers. As far back as 1801, however, a distinguished architect, M. Guillaumot, in the course of some observations on the injurious effect of the ignorant objections raised by the unprofessional public against the enormous expense of the building of public monuments, brought forward some interesting results of a lengthy research among the State documents; among these he finally discovered some accounts relative to the erection of Versailles. The tables prepared by M. Guillaumot comprise the expenses from 1674 to 1690, and we give these figures as affording a curious comparison with some figures given recently in these columns relating to the expenses of the great hall of Hampton Court Palace.

Masonry, &c., of Versailles and its dependencies, 42¼ millions of *livres* (francs); timber work, 5 millions; slating, 1½ million; lead work, 9 millions; carpentry, 5¼ millions; locks, 4½ millions; glass, half a million; mirrors, half a million; paintings, gildings,—not pictures,—3¼ millions; sculptures, not antiques, 5½ millions; marble-work, 10 millions; bronzes, 4 millions; iron and lead pipes, including those for the famous "machine de Marly," 4½ millions; tiles, paving-stones, and cement, 2½ millions; gardening, fountains, and rockeries, 4½ millions; excavating and removal of earth, 12 millions; divers extraordinary expenses, 6 millions; the Château de Clagny, 4 millions; the "Machine de Marly," exclusive of the Versailles expenses (this machine brought, as it still brings, water from the Seine to the fountains of Versailles), 7½ millions; the aqueduct of Maintenon, 17½ millions; the Château de Marly, 9 millions; indemnities to landowners, 12 millions; purchase of old pictures and antique statues, 1 million; gold and silver stuffs, 2 millions; plate, 6½ millions; crystals, agates, &c., 1 million; architect's fees, 2 millions; expenses previously to 1664, 3 millions; a total of something like 190 millions of francs, though 400 millions of francs is thought much nearer the sum expended than the lesser figure; a very large number of items being omitted in the above account.

Hampton Court cannot tell such a tale of pompous expenditure, and if its simple yet effective architecture, its prim, well-laid-out and well-kept gardens, cannot be said to bear comparison with the splendours of Le Nôtre's botanical skill and Mansart's royal designs, happily the story of its various occupants can equally, with difficulty, be compared with that of Versailles in its connexion with the French monarchy during its most dissolute days. But putting aside the past both of Hampton Court and Versailles, a comparison between the present condition of the quiet, suggestive, old English palace on the banks of the Thames, and the upstart, overwhelming, grandeur of Versailles, there can be scarcely differing views that with the former rests the superiority. Mr. James, the American writer, tells us in his most recent tale that the Americans are especially fond of Versailles, because there they expect to find uninjured the thorough life of the "old *régime*," and he expresses amusingly the disappointment of one of his characters who on visiting Versailles, with a view to obtaining a knowledge of the mode of life, finds the old town all but occupied by his republican countrymen. We strongly suspect that our impressionable cousins would not meet with such a disappointment were they led to expect to find at Hampton Court the relics of our old monarchy.

Versailles, with its miles upon miles of parquetried floors, its "gilded saloons," acres of meaningless decorations (Lebrun, &c.), tells only too plainly its history, over which it will be found that a false glamour has been successfully thrown. From an artistic point of view there cannot, in the mind of the thoughtful visitor, be two opinions as to the superiority of Hampton Court over Versailles; indeed, this was the point at which we had desired to arrive more immediately than we have done. The comparison which may be drawn between the existing collections of art, gathered respectively at Hampton Court and at Versailles, cannot be said to lie in favour of the latter.

There has recently been published an excellent catalogue of the pictures collected at Hampton Court. It lies in the power of any reader to compare Mr. Law's interesting volume,—or, indeed, for ordinary purposes the little guides that exist for Hampton Court will be found amply sufficient,—with any catalogue or notice of the artistic contents of Versailles; the comparison thus easily afforded will, we think, be found enough to justify our opinion. It is not alone from the fact that the creation of Wolsey's Palace takes us back nearer than Versailles to what the Italians well understand by "the epoch,"—the great epoch of artistic history,—that the contents of Hampton Court will be found to possess an interest to the art-student that is wanting at Versailles. Putting aside the now removed Raffaelle cartoons,—once the glory of Hampton Court,—as also the Mantegna tempera

pictures, there will be found abundance of other material for much interesting and profitable inquiry. The portrait collection of Versailles,—almost without exception modern,—will scarcely compare with the collection of portraits at Hampton Court: the Lely beauties, so long preserved at Windsor, and known, indeed, in the history of English art under the name which Walpole gives them of "the Windsor Beauties"; the Knellers, the Van Somers, the Honthorsts, the several superb Italian portraits,—among them a masterpiece by Titian,—the characteristic Velasquez, the Van Dycks, the Holbeins. Where at Versailles can be shown portraits as interesting as that of Lord Surrey, the Zucchero representing Queen Elizabeth in a charming fancy dress, several Gainsboroughs, and a dozen more other rarities of the painter's and portraitist's art? Horace Vernet's acres of much-vaunted battle-pieces we can look on, in the present day of Alfred de Neuville and Miss Thompson's triumphs, with much less enthusiasm than the generation of Louis Philippe's vigorously attudinising generals and over-costumed statesmen.

This is the season of the year when many English people are already abroad, or are going abroad; to those who have not as yet crossed the Channel and have a little time to spend in London before going to Paris, we would say, Do not fail before leaving England to pass an afternoon at least at Hampton Court in its quiet seclusion, undisturbed by the rush of the excited tourists that for ever seem to delight in rousing the hollow echoes of the long galleries of Versailles, and making tingle against each other the thousand rainbow-coloured drops of the glittering chandeliers in the famed *galerie des glaces*.

It is not a little strange that the settlement immediately in the neighbourhood of the English palace possesses so little charm compared with the surroundings of Versailles. Versailles leaves an impression on the minds of most strangers of being a delightful place of residence, and many Parisians of fame have indeed found it so; probably it is to this fact that Versailles owes so much of its charm. Such a feature is all the more remarkable as the natural position of Hampton Court on the pleasant banks of the Thames is one that is far superior to that of Versailles, surrounded by its miles of uninteresting flat plain.

THE PRESENT CONDITION AND HOPES OF ARCHITECTURE.

If the English lover of the Græco-Roman and Italian columnar style feels surprised at the existence of dissatisfaction with this architecture evinced by the oft-repeated complaint of our want of a national style, he must feel infinitely more so on discovering that a similar dissatisfaction with the style exists among the Italians themselves; which is the fact, if the declared persuasion of an eminent critic (Signor Camilla Boito) of the necessity for a new style, and attempt to invent one, together with his being allowed opportunity of embodying the result in important buildings, are to be taken as an indication of the public feeling.

Let us consider what the columnar architecture is, which has come down to us through many hands, and the foreshadowing of which formed the material grandeur of the early and renowned capitals of the world,—Nineveh, Babylon, Persepolis,—which was the glory of Athens, the magnificence of Rome; and for the embodied relics of which at the revival of art the greatest architects of Italy dug as for hidden treasures. The classical columnar ordinance of the Greeks and Romans I look upon as the essential nucleus or framework of the architecture of the world, for which we can imagine no substitute, and which must have appeared had the temple solemnities of Egyptians and Greeks never required it. It lay, a divine creation, like geometry or analysis, in the womb of chaos, and must of necessity have been called forth by the first imaginative and cultured people. It is, like the mathematics, rather a discovery than an invention of man. It is not occasional and peculiar, but symbolical and universal. Whatever new building material was introduced into architecture, or whatever material becomes dominant, the colonnade will not become obsolete. The simple and natural beauty of insulated columns, the magic of peristylar perspective, must ever charm the imagination of the educated and uneducated, the young and the old. The exclusive admirer of the Gothic should remember that that style is a lineal descendant of the Classic, and owes to the Classic its most pleasing features. The most beautiful Gothic cathedrals are those that show most reminiscence of the colonnade or round columns, a dearth of which always produces a harsh, liney appearance.

The same may be said of the Byzantine, Saracenic, and other styles. In fact, in the Greek temple of Corinth were lodged the germs or principles of the whole architecture of the world, as are the rudiments of the future plant in the seed. For this reason it is that in treating of the position and hopes of architecture I confine myself chiefly to classical, and not from any narrowness of view and aim, or lack of sympathy with the other beautiful and interesting, and equally true phase of it.

You meet with the colonnade, or anticipations or reminiscences of it, everywhere,—in the Hindoo and Buddhist temples, and cave temples, and in palaces, tombs, and mosques of all Mahommedan lands. Architectural ambition has almost always embodied itself and broken forth in columnar grandeur; as if the beauty and capacity for sublimity of groves of columns had smitten the imagination of every people possessed of one on the earth.

It is absurd to go into raptures over the Parthenon and be, at the same time, indifferent or opposed to the columnar style, because all that charms us in that building belongs to the columnar style, every example of which is susceptible more or less of the beauty and harmony of the Parthenon, which, denuded of its sculpture, remains exquisite architecture, proving it, like female loveliness, independent of the foreign aid of ornament. But the quality of being self-dependent or having need of nothing bears most analogy to the excellence or perfection of the Supreme Being, and therefore most divine. It is an attribute of the style that eminently fits it for the solemn temple, which it will as truthfully form as the gorgeous palace. And if it cannot express so vividly the hopes and aspirations of the Christian as the Gothic, its abstinence from the attempt is to the preservation of beauty in its sacred embodiments, and renders them a truer reflection of that grace of external nature which is the veil of the Eternal Cause, and nearer to the fashion of the shrine which we may suppose He would himself have built to his worship; more likewise in unison with the holy and beautiful breathed from the Lyre of Inspiration.

Let no one suppose the columnar architecture a mere stereotyped formula of three or four columns; for the scope for variation on their capitals alone is infinite. To it belongs the dome in its utmost chasteness and grandeur.

This is the style which certain architects and critics would supersede by some new invention.

The sudden appearance and general introduction of a new style has no precedent in the history of architecture, even among the most artistic nations. We can trace every known style back to its origin and descent from one or more parent styles, generally to two, except the Pelasgic, Egyptian, and Assyrian, their origin being lost in the night of time, and no remains of earlier styles having been found. New styles, it is true, have been evolved spontaneously and slowly by the mingling of two others, and may be again,—the growth of similar circumstances; but no style was ever called out of chaos. To reject the columnar ordinance of the Greeks and Romans, and seek for new elements, is as absurd as to reject all that has been wrought out in philology and literature, and go back to Cadmus or to hieroglyphics. He who does so places himself in a worse position than the first nations. He is like a poet by nature, endowed with the highest gifts perhaps,

> "The vision and the faculty divine,
> Yet wanting the accomplishment of verse."

He forgets, or is ignorant, that architectural creation does not consist in calling architectural designs from nothing; that it matters not how much an architect is indebted to other men for his materials, if he combines those materials according to new affinities and "adorns nature with a new thing." Nor need he be surprised if any architectural style which is the child of his own brain, does not find favour, or that it results in something the embodiments of which in buildings it would be flattery to call architecture. He must, indeed, soon discover that his only chance of competing with the past in architecture is to avail himself of the labours of his predecessors, and adopt the columnar ordinance of the Greeks and Romans, or the arcuated system of the Mediævalists.

Than such movements and the criticism, English or Italian, that leads to them, nothing can be more mischievous; for the faith of the student in the truth and capability of the style, which it is calculated to unsettle, is essential to his progress; and architectural students are in vain exhorted to diligence and enthusiasm in the pursuit of their art when they are left in doubt by conflicting criticism what phase of it to pursue, or whether any phase of it is worthy of their acceptance. Faith is as essential in art as it is in religion; for "if the trumpet give an uncertain sound, who shall prepare himself to the battle?"

But for this criticism there would be little need of inciting to zeal in the fascinating study of architecture. As in religion, unshaken faith would be followed by love in the breast of the student for one or another of the styles of the day that solicit his attention, according to his natural or acquired predilection.

Though, on the other hand, there are not wanting critics who, from dissatisfaction with present practice, or late efforts at originality, counsel the mere adapting the old productions of this style to modern purposes, and even go so far as to suggest copying, I will not suppose that the descendants of the ancient Greeks and Romans,—men with more or less of the blood of Phidias and Praxiteles in their veins, for such are the modern Italians,—are ignorant of the right use of architectural examples to the architect, or unable to grasp the true principles of their combination. I cannot but suppose that Italy contains hosts of men with sufficient imagination,—the vital quality in all art and artists,—to fuse into other harmonious examples the same elements from which those elder buildings were composed; in other words, of making the same use of the elements so abundantly placed at their command that Sansovino and Palladio made; which does not need a succession of eminently gifted men. Men of ordinary abilities will suffice if they have any reasonable depth of artistic feeling, which gives a power and insight to the intellect it would not otherwise possess.

Ancient examples are to be neither copied nor adapted; both practices are unworthy of an architect. Those who recommend them forget, or are ignorant of the epochal, local, and ethnographic nature of architecture,—the relation it bears to its own age and country. Ancient buildings cannot be exemplars for all times and places. They are to be mentally dissolved and recombined into other forms,—decomposed and recomposed.

Nothing is more natural than for the Italians to adopt this columnar ordinance, for it is their own rightful property,—the bequest of their forefathers. Italian architecture is not strictly a revival or resurrection of the Græco-Roman architecture, as it is generally supposed to be, for that style never died at Rome, which, owing chiefly perhaps to the sacred character of the Pontiffs, preserved in a greater degree than any other city the traces of ancient civilisation. The night, it has been said, which descended upon her was the night of an Arctic summer. The dawn began to reappear ere the last reflection of the preceding sunset had faded from the horizon. A stream, narrow indeed, but pure, of that architecture came down embodied in the Christian basilicas at Rome, which are not Romanesque, but Roman, whence it issued into all the countries of Europe. Certainly it was not revived in the sense in which Greek literature or painting or sculpture was revived. Greek literature had been lost to Europe for centuries, and survived only among the Saracens and Eastern Romans, from whom it was first recovered in the thirteenth century. Greek painting had been lost till recovered by Cimabüé and Giotto from the Byzantine school; so had sculpture, of which Pisano was the modern restorer. But Græco-Roman architecture, alive from Classic times, was present in all its beauty at the capital of the world when it was wanted, and, blended with Italian Romanesque, contributed to the inspiration of the Venetian, Roman, Florentine, and other varieties of the Italian in the sixteenth century.

I can imagine nothing more natural or proper than the resumption of the ancient architecture by the Italians, nor than the general course which it took in Italy in the fifteenth and sixteenth centuries. Let us glance at its history. It is probable that Brunelleschi was the first to infuse a purely antique spirit into his works, among which may be cited the cupola of the cathedral of Florence, the erection of which opened the way to the greatest architecture

enterprises of modern Europe, the Church of the Holy Ghost, and the Pitti Palace in the same city. He was followed by L. B. Alberti, who emulated the achievements of his predecessor, and in some respects excelled them. The churches of St. Francesco at Rimini, and of St. Andrea at Mantua, with the Palace Rucellai at Florence, are among the best of his works. Michelozzo, a scholar of Brunelleschi's, and other Florentine architects, followed Alberti, and were seconded in developing and applying the style by Bramante, who had practised in the former one. The Belvedere Court of the Vatican, the Court of the Loggia, and the Sora Palace at Rome, are specimens of his graceful manner. Peruzzi showed greater freedom in the use of his materials, as witness the palaces Farnesina and Massimi at Rome, and was seconded by Antonio Sangallo and by Raffaelle, in whose hands and those of Michelangelo, Vignola, San Michele, Sansovino, Palladio, and others, the style of ancient Rome was restored in all its grace and grandeur, and so expanded by additional elements, in its application to new uses, as to be rendered a distinct style, and in some respects a more consistent one than its antique parent or prototype.

No trail of the serpent seems to have been descried on it by any one of the architects just named, and many of them were men of strong religious feeling. They probably remembered that it had been in the service of Christianity in the Basilicas before mentioned since the time of Constantine the Great, long enough to atone for its guilt, if it had incurred any, in the service of a false religion; if, indeed, they did not feel that there is a holiness in real architecture, as in all true art, which no alliance with heathenism or anything else could take away. Such was the course of architecture in Italy, and the career of its most eminent professors,—the greatest architects, painters, and sculptors of the most accomplished age of the world since that of Pericles.

Now, if the human heart and imagination is the immediate fountain of all poetry and art, it is exceedingly absurd to suppose that the artistic instincts of such men, including one I have not yet named, Leonardo da Vinci, who, being an architect, was also concerned in the movement,—a painter, sculptor, poet, the greatest intellect of the fifteenth century, and seemingly of universal and superhuman knowledge,—should have betrayed them into a wrong path,—a path in which originality and progress was impossible,—and that another galaxy of great artists should have blindly followed them. I conceive that such men would have gone right by the mere force of their imaginations, and have been more likely to make a stride in the right direction than to slide into a wrong one. I conceive that such men as Da Vinci, Michelangelo, and Raffaelle, whose names are almost synonymous with beauty and sublimity,—who had grasped the whole realm of design, and were almost the inventors of chiaroscuro in painting,—would leave examples of a proper union between the three arts, and advance the style in every respect as no mere architect could. We should remember that artists such as they,—of the highest order that ever appeared on earth,—have always uniform, well-balanced minds, with judgments commensurate with imagination. If it be argued that true architecture is that on which its authors have impressed the leading thought of the age, I answer, the revival of the productions of Classic antiquity was the great thought of that age.

But this style is greater than its examples; and its highest reach of monumental grandeur or utmost possibility is not to be judged by its most important embodiment,—I mean, of course, that most costly and ambitious structure ever reared to the honour of Christ,—St. Peter's Church at Rome,—which, from some cause or other, does justice neither to the capabilities of the style nor the genius of the great architects employed on it. The exterior, of which alone I am speaking, has not a single detached column about it, and is, therefore, deficient in relief.

This church has been overpraised both by Byron and Lamartine, the latter more extravagantly when he says that in St. Peter's Church Michelangelo has clothed the idea of God with all the beauty of which it was capable, which is not true. The front of it was susceptible of such treatment by means of colonnades as would have rendered it infinitely more beautiful. Never was the homely proverb, "Too many cooks will spoil the broth," more strikingly verified than in the design of the Pontifical Church of St. Peter. The least eminent of the architects employed on it ought to have produced a superior principal façade, which lacks those mighty and vigorous masses of shadow without which, as Ruskin justly remarks, no building can be truly great.

Great mistakes, I grant, may be attributed to many of the leaders of the movement, and to none more than to him whose name has become identified with Italian architecture,—Palladio, who, it is certain, has been over-estimated by many eminent critics, as Quatremère de Quincy, Hope, Beckford, and, strange to say, by the great poet and philosopher, Goethe, who represents him as ever seeking to embody some "great image which he carried in his soul," a scarcely correct notion of architectural generation. He too often forgot that the beautiful in architecture springs out of the useful, having left instances among his works of unbordered windows, and of the columnar order constituting the whole of the architecture, which could, therefore, be separated from the building, though the better principle had been exemplified in the Florentine school. Palladio, however, oftener pursued architecture in the right spirit, and has left works, in the true sense of the word, original. He had no notion of merely reproducing Roman buildings, nor even adapting them to his purposes, but strove to mould the antique elements into accordance with his own ideas. He seems to have begun his career with the persuasion that the style would stoop to the humblest purposes of life, and that in extending it to such he was only continuing the applications of their architecture begun by the ancients themselves. His predecessors probably considered it as fitted only for churches, palaces, and public buildings; but Palladio's varied works at once proved that its applications were unlimited.

But be his faults or mistakes what they may, they are no reproach to the style which was practised in his time, the productions of which, in not a few instances, while they are unlike any former works, and therefore original, are amongst the most successful structures ever reared for harmony and beauty of form, and refinement and elegance of detail; being the issue of a fruitful imagination under the guidance of a pure taste and sound judgment.

Brighter and more enchanting forms than any that have yet appeared may be embodied by it, brought from among the golden visions that lie mirrored in the fairyland of the imagination; especially of the gayer and more aërial kinds, which will be admitted by him whose eye, bodily or mentally, has ranged over the creations of a style which is an offshoot of it,—the Saracenic,—in various countries of the East, more especially the exquisitely lovely scenes of fairy splendour in Hindostan, which are frequently aided in their designed character by a material of such purity and brilliancy that the whole resembles a flood of moonlight.

More artistic and higher combinations of Greek and Roman elements than Palladio or his predecessors or followers thought of are possible, and, what is more, are really called for by utility in some of the highest class of works. The great defect of the trabeated system is, that it is only fit to form the façade of a building to be entered singly, or in single file, and will not form the lofty and broad entrance required by a palace or church, for processions, without injury to its beauty; and while the colonnade is necessary to the highest grandeur, the arcade is essential to a great entrance-door or gateway. It gives the largest single opening,—an opening as broad and high as can be required.

But I believe the two principles can be combined in the formation of a grand entrance consistent with artistic harmony and unity; that is to say, two colonnades may, with some careful management, be combined by means of a connecting archivolt springing from entablature to entablature, into one great and harmonious feature, embracing a central entrance, which may be as great and lofty as could be desired. The side intercolumnar spaces would be subsidiary entrances, and highly useful and pertinent; or, where not required for entrances, would form framework for sculpture. The breadth of entrance thus secured seems highly desirable in any public building, whether public processions are to be provided for or not; and the mode of obtaining it here suggested is worthy of consideration for its increase of combined fitness and beauty. It would be a new kind of coalition between the Greek and Roman or Romanesque styles.

The Italian style as it spread from Florence, where it rose, to Rome and Naples on the south, and to Venice, Genoa, and Milan, on the north, accommodated itself to the natural, political, and social peculiarities of each city; most notably to those of the sea-girt and sea-intersected Venice, and so became the chief ornament of that gem of cities. It showed it could breathe a still more northern air, that of England, wherein a few works could be found that, for purity, harmony, and appropriateness, will compare with any of a corresponding class in Italy; along with abundant proof that no elements will so satisfactorily weave into the continuous houses or shops we require in our streets, with regard both to convenience and beauty. Indeed, its merit and value lie not in its sageness and beauty only, but in its organic vitality and possession within itself of the principle of future expansion and application to all the multiform and accumulating demands of human life. It will as truthfully form the features rendered needful by rain and wind and cold as those required by sunshine and heat; in other words, it is a Northern as well as a Southern style.

It will, doubtless, form in perfection every species of public and private edifice called for by the various institutions of every country of Europe, including engineering buildings, bridges, viaducts, &c., along with strictly architectural ones, without sullying its Classic purity, and render them musical as is Apollo's lute; for those columnar elements are susceptive of the utmost grace and refinement of which structural art is capable.

Such failures as the exterior of the British Museum are no disparagement of the style, for that is a magnificent display of its elements, which, owing to timidity, or want of imagination in the architect, were not worked up into a design. It is not answerable for that, nor for another remarkable instance of undigested material, which, in justice to architecture, should be pointed to, viz., the new Houses of Parliament at Vienna, a view of which was given some four years ago in the *Builder*, and now, I presume, approaching completion; which is nothing more than a number of decorated blocks of building in mechanical conjunction, which, though forming a magnificent architectural group, have no claim to be considered a work of art.

Nor are those modern buildings, which are externally reproductions of the Greek peripteral temple, such as the Town-hall at Birmingham, the Church of the Madeleine and the Bourse at Paris, the Walhalla at Bavaria, to be considered as anything but libels on the character and resources of the style, which is capable of infinite variety on the Greek type, and greater display of columnar richness and grandeur. The peripteral, unless redeemed by Parthenon-like perfection of line, by variation of capitals in the same façade, and high-class sculpture in the pediments and friezes, is a monotonous spectacle. Klenze in the Walhalla could have produced a national temple that would, in point of composition, have been an advance upon it.

What in each country this style requires is to be made as much as possible to form, not adorn merely, windows, doors, porches, chimneys, and other features required by the climate, in emulation of the Gothic, which grew up and around,—identified itself with,—essential features, as in the window, which was the most useful feature, and became the most beautiful, the useful and beautiful growing up in conjunction; which must be always the most pleasing, like that rarity a virtuous mind in a beauteous body. As to the chimney, it seems a providential provision for relieving the sky-line, and giving intimation without of the home-life within.

The so-called Queen Anne movement, in search of greater picturesqueness, seems to me to be uncalled for. Holland is useful to feed the imagination of the architect, which must ever be indebted to reminiscence,—a fact the ancients meant to indicate by representing the Muses as the daughters of Memory. Inspection of the picturesque buildings of Holland is calculated to make his own mind more prolific. They are seed cast therein to bear fruit in his own works. But with the highest reverence for the art-genius of the Dutch of the seventeenth century, (most brilliantly manifested, however, in painting), I think it is unworthy of English architects to introduce and set up here a style from Holland. It is, to say the least, going to the

huckster's shop instead of the warehouse for our provisions.

If we are as truthful and independent in our treatment of the columnar architecture, in acclimatising and nationalising it, as were the Dutch architects, and withal pay due attention to the securing a good and lively outline, and light and shade in designing, and are careful ever to make a beauty of necessity, we shall be sufficiently picturesque. Time and weather, and accident are agents in the production of that extreme degree of picturesqueness which the landscape-painter delights in; and their effects are not to be anticipated by the architect.

When I contemplate the beauty and capacity of the style in question, and of the styles descended from our forefathers in their respective embodiments,—the result of the highest efforts of the wisest nations in the way of architecture, forming a mine of elements such as neither Greek nor Roman ever knew, and put into the hands of all by means of engraving and photography, I feel more disposed to exclaim, in the words of the Psalmist, "The lines have fallen to us in pleasant places, and we have a goodly heritage," than to complain of the want of a national style. For if these are not our national styles whose are they? A question history is best able and has most right to settle, and she intimates, I think, clearly that in working in an adapted or modified Italian style we are truly succeeding and following the great nations that have preceded us in civilisation,—Egyptian, Etruscan, Greek, ancient and modern, Roman, Venetian, Pisan, and Florentine,—in the way we should go,—the providential way, with increased and accumulating means and opportunities of arriving at successful issues. Our difficulty seems to me to be not in having no national style, but in having two national styles,—the style we inherit from Classic antiquity along with its civilisation, and that bequeathed by our forefathers,—a style to which many hearts cling, and not without cause. We have two phases of architecture, so beautiful that we cannot turn our backs upon either, and may say, in the words of Gay's "Beggars' Opera":—

> "How happy could I be with either,
> Were t'other dear charmer away!"

and I question whether any former nation would not have felt and acted in like manner.

If the Gothic would borrow a little more of Greek refinement from her Oriental sister, the Byzantine style, of which she is highly susceptible, and fully recognise the change in the world and in her own circumstances since she fell asleep in the sixteenth century; and if the Classic at the same time were fully nationalised, they would assimilate so far that there would be but little discord in our towns arising from the pursuit of both.

Whether they would or not, neither Gothic nor Classic can ever be abandoned in favour of a new style; for no new style will ever be invented or generally followed. We had better, therefore, accept that fact, and pursue the styles we have, which, indeed, seems the providential course. Each style, however, should have its separate followers, as no man can with heart and soul follow both; and the student should be taught to make choice of one or the other, which would be most favourable to his growth in artistic feeling and power. It was, therefore, wise in the Royal Academy Professor in his recent lecture to discourage the following a plurality of styles. Inigo Jones was, doubtless, right in appending a Corinthian portico to old St. Paul's Cathedral. He could put some feeling into that, but he could probably have put none into a Gothic porch, and a living dog is obviously better than a dead lion.

I conceive of architecture, like the graceful figure of her on the tomb of the Italian architect Sada, engraved in the *Builder* not long ago, as flourishing in the bloom of an immortal youth and beauty,—for such the rose of juvenility must intimate on the brow, pensive though it be, of a lady who, if her first advent on earth was in Egypt, and the sanctuary of Karnach was her firstborn, must be over 4,000 years old. I grant that she has betrayed great eccentricities within the last century, not only in England and the North, but in Italy, the birthplace of her most illustrious modern followers. But I strongly suspect that her aberrations are in a great measure owing to the conflicting opinions and advice of her councillors (the critics), whose utterances have been, in too many instances, merely empirical, and too seldom based on the spiritual and emotional nature of architecture and art. Instead of trying to breathe into her some sparks of her ancient fire, by reminding her of her glorious antecedents and achievements, and especially of her labours of love in ancient Greece and in Mediæval Europe, through which she has helped the cause of civilisation in the world, and even exalted the idea of religion, they have of late been prophesying evil against her, insinuating that she is in a decline, and all but defunct; one, otherwise an eloquent and judicious critic, even talking of mourning in sackcloth and ashes over her degradation. A glance over the chart of her history will show that she is, like ourselves to a great extent, the creature of circumstances,—the sport of accident; and if so, surely no circumstance, no accident, can be more injurious to her than such conduct on the part of her friends, concerning whom she might well, with the ancient Roman, cry out to the Gods, "Oh, save me from my friends!"

What she has once done she can do again. The aliment on which she lives is as nourishing and the fountains of her inspiration are as lofty as ever they were, and more unfailing. Of a soul-born, spiritual substance, she is necessarily indestructible, and exempt from the common lot of obsoleteness:—

> "Age cannot wither her, nor custom stale
> Her infinite variety."

Like her sisters, Poetry, Painting, and Music, she has fresh fields and pastures new and delightful for ever stretching out before her, through which she may

> "Still walk in beauty like the night
> Of cloudless climes and starry skies."

But I have long been of opinion that her gait and mien would be more majestic if she were not so much perplexed with matters which do not properly belong to her, and which might very well be intrusted to another and more material agent, called Practical Building or Construction, who would be held responsible for the faithful and durable embodiment of her images of beauty. She should be on intimate terms with, nay wedded to, Constructive Science, and her conceptions should be the fruit of the union; but beyond the full mental development of every part of her offspring as to form and hue in all their minutiæ, she should not be expected to operate. All the rest ought to be left to her deputy or subordinate, Practical Building, educated expressly for the post, who should govern and direct his invaluable servants,—Masonry, Bricklaying, Carpentry, Joinery, Plumbing, &c., and become answerable for their honest service. I do not mean that she (Architecture) should shirk any mind or heart work whatsoever, but simply relieve herself of all that is merely mechanical, and that could be as well or better done by another, and reserve her strength for higher work.

I know nothing more that is wanting beyond what I have directly or indirectly pointed out to render her winter of discontent a glorious summer but sincere and earnest followers who, like Michelangelo, would work for the love they bore to her, and not merely for the gold they could wring from her. Some gold they must have, and some gold she will doubtless give them, but the "accursed thirst of gold," as the prince of Latin poets calls it, must not be their inspiration. It is not too much to say, "We cannot serve her and Mammon," a truth which it is important for those who have her interest at heart, and are anxious to remove all stumbling-blocks from her path, to bear in mind. A community of her true followers, wheresoever born, bound together by sincere attachment to her for her own sake, would constitute the true modern Freemasonry, and be a worthy successor to the Mediæval; the proper successors or continuators of the Freemasons being surely architects and skilled and scientific builders, architectural sculptors and carvers, and even earnest foremen and workmen, rather than the miscellaneous fraternity (miscellaneous as regards individual professions) that now bear the name.

Than such a community of various ranks of earnest men, each pledged and incited by every high consideration to the service of their beautiful mistress, through evil report and through good, nothing, I think, would be better calculated to meet the present exigency, and awaken in the profession, or at least in the breasts of all susceptible of it, some sparks of the pure religious-and-art spirit under which the Mediæval Freemasons worked; while the achievements of the Freemasons, and Greeks, and Italians,—that is, architecture in its highest examples and possibilities,—would be likely to seize upon and enflame their imagination, and become an ideal standard of aspiration. Such an institution would, like chivalry, have a purifying and elevating influence on the character of each member.

Within such an institution I can imagine the workman sympathising in the emotions of the architect, and having an æsthetic part in the adornment of his works.

Samuel Huggins.

SANITATION IN ANCIENT ROME.

As we pointed out in a recent article* on the architecture of modern Rome, there is every probability of Italian art becoming a thing of the past, especially if, as seems to be the case, the deterioration so noticeable on the Tiber should extend itself from one end of the Italian Peninsula to the other. Modern Italian architects and artists appear to be far behind their glorious predecessors, who have made their works serve for imitation to many generations of artists. But modern Italians have also deteriorated, compared with their forefathers, in other domains of what constitutes civilised life. This remark applies especially to the question of sanitation. We know, at least travellers very often do to their cost in the loss of health, that in sanitary matters Italy does not occupy a very high place; and from a lecture recently delivered by Professor Uffelmann, of Rostock, it appears that in this respect they are not nearly on the level occupied by the ancient Romans. To do them justice, however, it ought to be added that, for that matter, they are no worse than other nations, who very often are behind their ancestors in a good many things, and might well learn from them. At present, however, we have only to deal with Rome; and from the lecture to which we have referred, and which throws much light on a subject hitherto very little known, it appears that in ancient Rome, the metropolis of former times, there existed important institutions for preserving health amongst its inhabitants.

Although there were then at Rome no sanitary inspectors, in our modern sense, the Ædiles and Censors were charged with sanitary functions. It was the Emperor Augustus who first appointed inspectors of water-supply and superintendents of sewers, who exercised a sort of police supervision also over the river of the city, the Tiber. The city of Rome was early provded with a system of sewers, which at first, at the time of King Tarquinius Priscus, only had the object of draining some parts (amongst them the Forum) of the city, but which later likewise served the purpose of modern sewers, that of receiving and carrying away all descriptions of refuse. Under Tarquinius Superbus this system of sewerage was completed by the construction of the Cloaca Maxima (the largest sewer), leading to the Tiber, which still exists, and, whatever be the difference of opinion as to the provision of large sewers, may well rank with the best sewers of our time, so far as regards excellence of construction. For five centuries this system of sewerage was carefully preserved, extended, repaired, and cleaned. But with the decline of the city this great work was permitted to fall in ruins, and only the principal sewer remained, which has been preserved down to our day, but choked up by mud, and at its end towards the Tiber filled up to two-thirds its height.

The second fundamental condition for the preservation of the public health, that of providing the city with an abundant supply of good water, was done full justice to in ancient Rome. When the water in the Tiber, in consequence of its contamination by the population inhabiting its banks, could no longer be used for drinking, the Censor Appius Claudius constructed an aqueduct, for the greater part underground, from Praeneste to Rome, which called after him the Aqua Appia. Fifty years later this was supplemented by a second; and, after other seventy years (144 B.C.), by a third aqueduct, the Aqua Marcia. The latter brought the water from the Sabine Mountains, was thirty-two miles long, and supplied excellent water, which for centuries refreshed thirsty Romans, and which was originally constructed at a cost of 2,000,000*l.*, an enormous sum at that time. It was in ruins for many years, but

* See p. 388, *ante*.

was restored ten years ago, and has since then furnished Rome with its water supply. Numerous other aqueducts, some of them very magnificent and gigantic, were built. Towards the close of the Empire, nineteen aqueducts, fourteen larger and five smaller ones, conducted the water to the metropolis. At the end of the first century after Christ, ten aqueducts supplied a daily quantity of 33,000,000 imperial gallons of water to Rome. As four-eighths of this volume were used by the Thermæ, or public baths, and one-eighth by the imperial palaces, there remained yet three-eighths for the use of private consumers, the quantity supplied to the two million inhabitants of the metropolis being sixty-two imperial gallons of water per head per day for domestic use. The water was conducted through the city in leaden or earthenware pipes. The aqueducts were fully protected by law. No buildings could be erected over them, no trees planted near them. Heavy punishment was inflicted on persons polluting the water or damaging the aqueducts or conduits. With the decline of Rome, those splendid institutions also fell into ruins; but they were partly destroyed by hostile armies or besieging forces, in order to compel the Romans to surrender their city.

Public baths reached a state of perfection in Rome such as has not been attained by any other nation. At first, of course, only the Tiber formed a natural basin for ablutions; later artificial public baths were constructed, and under the emperors the Thermæ were introduced. Those magnificent bathing establishments not only furnished cold, warm, and hot baths, but they supplied also shampooing baths and cold ablutions; anointment of the body was likewise practised there. Those institutions still serve in many cases as patterns for baths erected now for our well-to-do classes, but which at that time existed in incredibly large numbers, the use of them being, besides, free to all comers. But those establishments did not bring with them the unmitigated advantages it was probably at first thought they would furnish; they degenerated, and became the abodes of idleness and hotbeds of vice.

There was no want of regulations in ancient Rome as to height of houses and width of streets. When, after the great fire, under Nero, the city had to be rebuilt, regulations of this description had to be strictly followed. There was likewise an abundance of public places of amusement, walks, and public gardens. The government also looked to the supply of provisions, its solicitude at first being merely confined to taking care that a sufficient quantity of corn was continually stored in Rome. Many descriptions of food,—for instance, meat,—were also inspected. Of the stored grain, large quantities were given away to the poor since the time of Cæsar; during the reign of Pompey very nearly 1,000,000*l.* was spent for this purpose annually.

There existed many charitable institutions, although there were few of them according to our notions. The Emperor Nerva sank large funds, the interest of which was applied in supporting the children of poor parents and orphans. Trajan placed nearly 5,000 children on the list of recipients of corn. Antonius Pius founded an institution for poor girls. Hospitals did not exist very early; they sprang up under the influence of Christianity, their number amounting in the ninth century to over twenty. Nothing was done in the direction of public care for the poor until the middle of the second century after Christ. Antonius Pius appointed communal physicians, who were free from taxes, but who were under the obligation of rendering certain services to the state and the commune, and who had, among other things, to treat gratuitously all the poor of their respective districts. Alexandrus Severus was the first to pay them a salary, and gave them the name of *Archiatri populares*.

The ancient Romans did not permit the industrial classes to poison the air for them. Fullers, who used urine in a state of putrefaction in the manufacture of cloth, had to carry on their calling outside the city gates or in its remote quarters. Roman law-makers had a watchful eye on the disposal of the dead. At first deceased persons were interred inside the city; later those interments were prohibited, and a public cemetery was laid out outside its walls. Funeral funds existed very early in Rome, which paid, as in our time, a fixed sum at the death of a member if the latter had subscribed regularly. Cremation was introduced in the time of the Decemvirs, at first only in the case of individuals, but later, after Sulla, cremation became more common. At one time this was the general mode of disposing of the dead, but committal to the soil was never entirely abandoned, and with the spread of Christianity became again more general. But in the beginning of the second, during the third and fourth, and the beginning of the fifth centuries, the Christians used the subterranean cemeteries, the so-called Catacombs, in which the bodies were placed in hollows cut in the walls of the passages driven through the tufaceous limestone underlying Rome, the cavities being afterwards closed by marble slabs, on which the names of the deceased were engraved. In time these catacombs became more and more complicated.

From the above it will be seen that the institutions and hygienic regulations of the ancient metropolis were very remarkable, and in some respects at least much more perfect than at the present day in many cities and towns the inhabitants of which think a great deal of their sanitary arrangements.

THE ROMAN CAMP OF BONNA ON THE RHINE.

The excavations which have been carried on very quietly near Bonn, at the expense of the Provincial Museum of that town, and under the direction of Dr. E. aus'm Weerth, and which had the object of laying bare the Roman camp of Bonna, established a short time before the beginning of our era, have been crowned this year with well-deserved success. With the assistance of Herr Koenen, sculptor, of Neuss, and one of the editors of the *Organ für Geschichte und Alterthumskunde von Düsseldorf und Umgegend*, the above-named explorer has, within a comparatively short time, succeeded in exposing not only the complete remains of the *Porta principalis sinistra* and parts of the enclosure-wall joining on to it, but also the remains of the *Porta principalis dextra* and remnants of the *enceinte* forming the eastern boundary of the camp. Owing to his exertions, full light has now been thrown on the position, camp form, and arrangement of this great military station. It formed a square with sides 1,706 ft. long and rounded-off corners, and was surrounded by a wall 6 ft. thick, a ditch 56 ft. wide, and an outer rampart of a width of 29 ft. 6 in. A rampart, 29 ft. 6 in. thick, abutted on the inner flank of the enclosure-wall, along which, for the whole circumference of the camp, the *Via angularis*, 18 ft. wide, could be traced. Besides this road there were three others, the *Via prætoria*, the *Via principalis*, and the *Via quintana*. Each of them terminated at either end in a corresponding gate. These gates were,—the *Porta prætoria*, which lay close to the Rheindorferweg, close to the south-east corner of the Jewish cemetery; the *Porta decumana*, found in the same line, south of the road "An der Esche" (north of the Rosenthal); the *Porta principalis dextra*, which was laid bare on the Viehweg, in front of the Wichelshof; the *Porta principalis sinistra*, discovered in the same road, east of the Rheindorferstrasse; and, finally, the remains of foundation, probably, of a northern tower, forming the termination of the *Via quintana*, on the road leading to the Rhine between the Viehweg and the Rosenthal. The *viæ* of the castrum are bordered by large buildings, of which several have already been disclosed, as well as a complete system of canals. The arrangements of the various parts of the camps show that it was a military station of the first rank. For instance, no *Porta principalis sinistra* has hitherto been discovered which can compare in size with that of Bonna. It is a double gate, of about 26 ft. wide, flanked by two heavy square towers, each 37 ft. 6 in. long, and 29 ft. 6 in. wide, and the enclosure wall abutting on to them on their outside. The several walls have partly a thickness of about 7 ft. The material used for them and the other structures of the castrum is tufa. Professor aus'm Weerth must certainly be congratulated on the completeness of his archæological discoveries, doubly interesting on account of their close connexion with the history of the civilisation of the Rhine country, which may be said to have commenced with the Gallo-Roman and Germano-Roman campaigns. A hope is expressed that further means will be supplied for completing the investigations which have been so successfully carried on thus far.

THE HOLLOWAY COLLEGE, EGHAM, SURREY.

Not far from the Virginia Water Station of the London and South-Western Railway, two remarkable establishments are in progress of completion at the cost of Mr. Thomas Holloway, and which he proposes to present to the nation. Including endowments and fittings the expenditure will be little short of a million sterling,—certainly a noble gift. One of these is a Sanatorium, for curable cases of mental disease,—a building already partially illustrated in a previous volume of the *Builder*. The other, at some little distance from the Sanatorium, in the direction of Egham, is a college for the higher education of women; and of part of this we give a view in our present issue. It stands in an area of 95 acres of freehold land at Mount Lee, and has a frontage to the high road of about three-quarters of a mile, close to Windsor Great Park. The college buildings, already far advanced, are set back from the road upon an elevated plateau commanding a superb view of the surrounding country, and surrounded by pleasure-grounds, extensively planted and intersected with groves, streams, and lakes. The designs for the construction of the building, approved by Mr. Holloway, were made by Mr. W. H. Crossland, architect, who is now superintending their execution. The style is that of the French Renaissance, in which sculpture enters largely into the design, and here Mr. Crossland has had the able assistance of Mr. Fucigna.

Holloway College is of enormous size. It forms a double quadrangle 500 ft. from east to west, and 350 ft. from north to south. The main portions, which run from east to west on each side, consist of five floors, each 10 ft. 6 in. high, all of which (with the exception of the western portion of the lower floor, arranged as store-rooms) are rooms for students, professors, and class-rooms, connected by four spacious stone staircases placed equi-distant, two in each wing. The building is laid out to provide ample accommodation for 350 students, and each student will have two rooms, arranged as bed and sitting rooms, each 13 ft. 6 in. by 10 ft. 6 in., and divided by corridors 10 ft. wide and 500 ft. long on each floor. The professors and heads of departments will have rooms in the central and corner pavilions, which are slightly larger in area. There are three class-rooms also in the corner pavilions, each 28 ft. by 16 ft. on the ground floor, together with a lecture-theatre, 42 ft. square by 18 ft. high. The three cross buildings running from north to south have been arranged as follows:—That on the west front comprises the chapel, 130 ft. long by 30 ft. wide and 30 ft. high, and a recreation-hall 100 ft. long by 30 ft. wide and 30 ft. high. These two apartments have a spacious driving gateway between them, carried up through two floors, and leading into the upper or western quadrangle. The gateway is surmounted and surrounded by suites of rooms for chiefs of departments, arranged five on each floor, with porters' rooms, &c., all approached by stone staircases, the whole being crowned with a clock tower, rising to a height of 130 ft. from the ground.

The cross building between the two quadrangles will contain on one side the dining-hall, 104 ft. by 30 ft. by 25 ft. high, and on the other side the kitchen, 80 ft. by 30 ft. by 25 ft. high, together with cooks' rooms, stores, and surgery, &c. The centre between dining-hall and kitchen is occupied by an octagonal tower, 100 ft. high, containing on the ground floor a central hall 35 ft. in diameter, approached from each quadrangle by flights of steps, as well as from cloisters and the terraces over them, which run the whole length of this building on each side from north to south. The upper part of the octagonal tower above the roof-line contains two series of low-service cisterns for supply to main buildings and hydrants. The floor under the dining-hall is laid out as servants' rooms, and that under the kitchen as stores, with large entrance-hall between, entered from either quadrangle. The cross building on the east front, also running from north to south, contains, on the lower floor, the tradesmen's driving gateway in the centre, 48 ft. by 17 ft., on the left of which is a gymnasium and racket-court, each 50 ft. by 30 ft. by 16 ft. high, with lavatories, &c., adjoining, with library on the floor over 100 ft. by 30 ft. by 30 ft. high. On the right of the gateway will be two large music practice-rooms and twelve small piano-rooms, with museum and picture-gallery on floor over, 100 ft. by 30 ft. by 30 ft. high. The

driving gateway in the centre of this block will have suites of five rooms on each floor over for heads of departments, reached by a spacious stone staircase, and the whole surmounted by a bell-tower 140 ft. high. The three cross buildings are approached from the main buildings at each end as well as from the quadrangles, cloisters, and terraces in the centre.

The contract with Mr. John Thompson, of Peterborough, was signed on the 30th of July, 1879; and the building has now been in course of erection for two years, and rapid progress is being made, the contractor having agreed to have the whole finished and delivered up in four years from that date for the sum of 257,000*l*. This amount is exclusive of fittings, furniture, &c. Extensive plant and machinery are employed on and about the works, and about 800 men are constantly at work.

The constitution of the college, to be embodied in a trust-deed or charter, will set forth that the college is founded by the desire and counsel of the founder's wife, now deceased, and that its object is to afford the best education suitable for women of the middle and upper-middle classes. The trustees are to be a corporate body, with perpetual succession, and to have all the usual powers and privileges. The governing body will consist of twenty-one persons, to be appointed partly by the University of London and partly by the Corporation of London, and it is stipulated that a certain portion shall always be women. Religious opinions are not in any way to affect the qualification for a governor. It is the founder's desire that power by Act of Parliament, Royal Charter, or otherwise, should be eventually sought to enable the college to confer degrees after due examination; and that until such power is obtained, the students shall qualify themselves to pass the Women's Examination of the London University, or any examination of a similar or higher character which may be open to women at any of the existing universities of the United Kingdom. The curriculum will not be restricted to subjects enjoined by any existing university. Instead of being regulated by the traditions and methods of former ages, the system of education will be mainly founded on studies and sciences which the experience of modern times has shown to be most valuable, and as best adapted for the intellectual and social requirements of students. The governors will, therefore, be empowered to provide instruction in any subject or branch of knowledge which shall appear to them, from time to time, the most suitable for the education of women; and the curriculum of the college will not discourage students who may desire a liberal education apart from the Latin and Greek languages. Proficiency in classics is not to entitle students to rewards of merit over others equally proficient in other branches of knowledge. It is intended to provide twenty founders' scholarships, of the value of 40*l*. each, tenable for not more than two years in the college. No professor will be required to submit to any test concerning his or her religious opinions. The founder declares that, "having witnessed the hand of God in all things," it is his earnest desire that the religious teaching of the college should be such as to impress most forcibly on the mind of each student her individual responsibility, and her duty to God. Students will have the right to attend the services of the Church of England, or of any sect or denomination which their parents or guardians may desire. The domestic life of the college is to be that of "an orderly Christian household," with a daily simple service, the reading of a portion of Scripture, and a form of prayer approved by the governors. The Principal of the college will be a lady, and duly qualified lady physicians and surgeons are to be resident in the college. Other important articles in the proposed constitution of the Holloway College are that the lady principal shall, with the sanction of the governors, make from time to time, such provisions as might be expedient for the conduct of public worship on Sunday in the college chapel, but no permanent chaplain shall be appointed, and no arrangement shall be made which would identify the college in any way with any particular sect or denomination of Christians; that no other church or chapel, or place of worship, shall at any time be built on any part of the college estate, as a very large, handsome, and suitable chapel, with a fine organ, will be provided in the college building; that all the students shall reside in the college; that no house for any professor, teacher, chaplain, or minister, shall now or hereafter be built on any part of the estate; that no student who does not permanently reside, during the college terms, in the college, shall be permitted to receive instruction there. It is also provided that each student shall have for her separate use two rooms, which shall not be shared with any other student, and that students' residence at college shall be restricted to four years, unless, under special circumstances, an extension shall be sanctioned by resolution of the governing body. It has also been decided that no student shall at any time be admitted to the college who has not attained the age of seventeen, or who has not passed a satisfactory examination. The examination for admission shall be regulated from time to time by the governors, but shall, except as hereafter provided, never fall below the following standard:—The English language, composition, and history; the elements of Latin, French, or German, or some other foreign language; arithmetic, integral and fractional; the elements of some one branch of mathematical or physical science. Candidates who may have passed the senior local examination at Oxford or Cambridge, or the matriculation examination of the University of London, or such other examination by some competent and public authority as, in the judgment of the governors, is equivalent to such University examinations, shall be admissible to the college without further examination. Provided always, that during the first seven years after the opening of the college, the governors shall be at liberty, in special cases, to relax the above-named conditions, and to make such regulations for the admission of students as they deem expedient. The lady principal is endowed with almost absolute power, subject to the approval of the governors, but she also must conform to sundry regulations. She must not marry, on pain of disqualification; and on attaining the age of sixty she must resign, like all other professors in the college.

Mr. Holloway, amongst his other good works, contemplates the formation of a picture gallery in the college, and the paintings he has already purchased for the purpose show that it will be a collection of no common kind.*

The illustration we give is a reproduction of a drawing exhibited recently at the Royal Academy by the architect.

THE TOMB OF PRINCE JOHN.

Prince John, second son of Edward II., was born at Eltham, in Kent, on Ascension Day, 1315. The year after his father's assassination he was created Earl of Cornwall by his brother, Edward III., at a Parliament held at Salisbury.

In the year 1333, a proposal of marriage was made between him and Joan, daughter of Ralph, Earl of Eu, and in the following year another with Mary, daughter of the Count of Blois; afterwards a marriage was arranged with Mary, daughter of Ferdinand, king of Spain, in 1334, for which an agreement was drawn up; but the Prince did not live to fulfil the engagement, for in the month following, while in Scotland, he died, at St. John's Town, Perth, aged 19.

By the express orders of the king, he was to be buried *entre les royals*, yet so as to leave room for the king and his successors. This was fulfilled by his being laid in the quasi-royal chapel of St. Edmund, in Westminster Abbey. The body was removed with much pomp, and the funeral was so stately and magnificent that the then considerable value of 100*l*. was placed upon the horses and armour offered there on the day of his burial.

The tomb has a moulded base and panelled plinth of stone; above the plinth are panels of alabaster, each of which contained a small alabaster figure, with a dark back-ground, which Mr. Burges describes as slabs of black slate.

The cornice, with carved enrichments, is also in alabaster. The upper slab is of Purbeck marble, and the effigy is of alabaster.

In "Gleanings from Westminster Abbey," Mr. Burges describes the effigy as being "an exceedingly curious and valuable specimen of military costume. . . . . We see the curious garment, the cyclas, cut so much shorter in front than behind, then beneath it the gambeson, then the coat of mail, and lastly the haquetcn.

The sword-handle is also very beautifully sculptured, and the shield is a very valuable example of heraldic drawing. . . . The little figures of weepers are open to the criticism of being placed in exaggerated attitudes, while the heads and hands are too large. The figures are all crowned and are excellent studies of costume."

In Neale's description of the tomb he says that the "effigy is in plate armour with a surcoat, a gorget, and a round helmet encircled by a coronet. The coronet of this earl is of the ducal form, viz., having alternately small and large trefoil leaves; he is said to be the first person whose coronet is so represented. On his left arm is a beater shield charged with his arms, viz., three lions of England, with a bordure of fleurs-de-lys."

The tomb was originally surmounted by a very fine stone canopy divided into three bays on each side by buttresses, which were carried up from the ground, terminated by crocketed pinnacles, the centre ones being higher than those towards the ends of the tomb. Each bay had a pointed arch with cinquefoil foliated cusping carved, and smaller secondary cusping, and was surmounted by a gable with crockets and figures as finials. Each tympanum was pierced by a circle with quatrefoil cusping and smaller cusping similar to the arch below; all the spandrels were also pierced and cusped. Upon the canopy and over the centre of the tomb was a pyramidal crocketed spire with angel figure as a finial. The soffit of the canopy was richly vaulted.

In the year 1775, at the funeral of Lady Elizabeth Percy, Duchess of Northumberland, the crowd that had collected to see the funeral was so great that the clergy and choir scarcely could make their way. Just as the procession reached St. Edmund's Chapel, the screen, together with a part of the canopy, of this tomb fell, bringing with them men and boys who had climbed on them. The confusion was so great that the Dean did not return to complete the service till midnight.

The canopy was wholly removed about fifty years ago by order of Bishop Pearce, then Dean of the Abbey.

My drawing represents the tomb in its present condition. W. B. Bassett-Smith.

*1. Trentside (Creswick)	£2,100	0	0
2. "Man proposes, God disposes" (Landseer)	6,615	0	0
3. Battle of Reveredo (Clarkson Stanfield)	3,465	0	0
4. Pic du Midi (Clarkson Stanfield)	2,677	10	0
5. Two Princes in the Tower (Millais)	3,990	0	0
6. Princess Elizabeth, daughter of Charles I., in prison at St. James's (Millais)	3,150	0	0
7. Landscape and Cows (Cooper)	273	0	0
8. Landscape and Sheep (Cooper)	546	0	0
9. Haweswater (Fyne)	273	0	0
10. Travellers in Storm (Copley Fielding)	3,150	0	0
11. Borrowdale (Collins)	2,625	0	0
12. Tomb in the Water (Matter)	2,362	10	0
13. Verona (Holland)	913	10	0
14. Old Cronie	550	0	0
	£32,690	10	0

OATLANDS SCHOOL, FOR WALTON-ON-THAMES SCHOOL BOARD.

The design for this building was selected in a limited competition including designs submitted by two other architects.

Accommodation is provided for 133 boys. The school-room is 57 ft. long by 20 ft. wide. The class-room is 57 ft. long by 15 ft. wide. Both rooms have open-timbered roofs. The master's house contains a living-room, 12 ft. by 12 ft. 6 in., with bay-windows; kitchen, scullery, and three bed-rooms over.

The school and class rooms are to be warmed by means of Mr. D. O. Boyd's hygiastic ventilating stoves. Ventilation is specially provided for by means of inlets in the angles of the rooms, and in each window-back; and outlets into an air-chamber in the roof; the upper parts of the windows also open.

Externally, the building will be faced with red Claygate bricks, relieved with timber work and tile hanging.

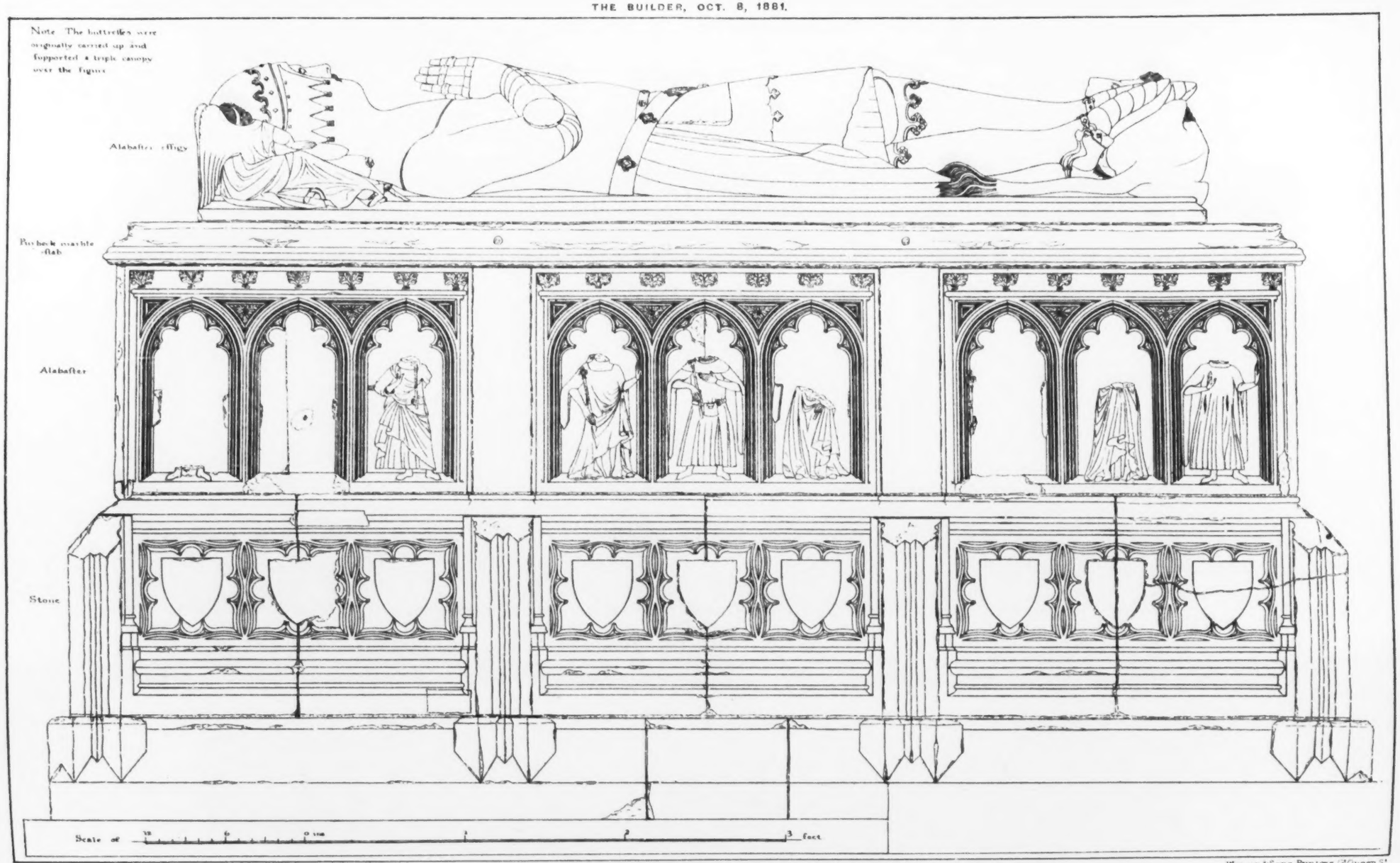
The roofs are covered with local dun-coloured tiles.

The contract has been taken by Mr. Frederick Peters, Jun., builder, of Oatlands Park, Weybridge, for the sum of 1,256*l*.

The architect is Mr. Rowland Plumbe, of No. 13, Fitzroy-square.

Iron and Steel Institute.—The reception committee have issued cards for a *conversazione* at the South Kensington Museum on Thursday, the 13th inst.

INTERIOR OF THE CHURCH OF ST. SOPHIA, CONSTANTINOPLE.



C F Kell Photo-Litho London E C

THE TOMB OF PRINCE JOHN, WESTMINSTER ABBEY.

Wyman & Sons, Printers, 74 Queen St.

C F Kell Photo-Litho London E C

THE TOMB OF PRINCE JOHN, WESTMINSTER ABBEY.

Wyman & Sons, Printers, 74 Queen St

Sprague & Co 22 Martins Lane Cannon St EC

THE HOLLOWAY COLLEGE, MOUNT LEE, EGHAM, SURREY.

N.E. Entrance to Students' Stairs, from East Quadrangle.

Mr. W. H. Crossland, Architect.

C F Kell Photo-Litho London E C

THE TOMB OF PRINCE JOHN, WESTMINSTER ABBEY.

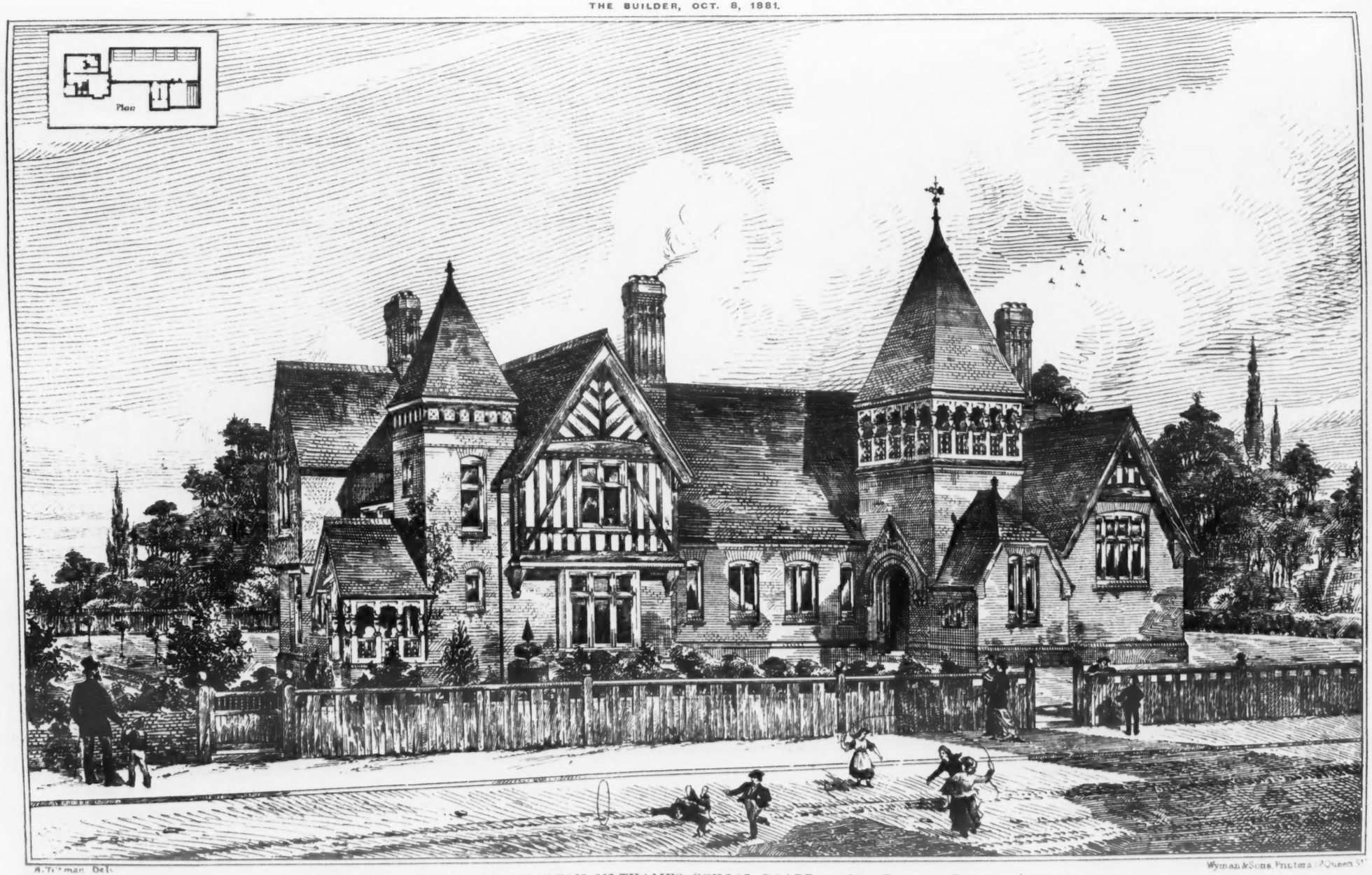
Wyman & Sons, Printers, 74 Queen St

Sprague & Co 22 Martins Lane Cannon St EC

THE HOLLOWAY COLLEGE, MOUNT LEE, EGHAM, SURREY.

N.E. Entrance to Students' Stairs, from East Quadrangle.

Mr. W. H. Crossland, Architect.



A. Tilman, Del.
Whiteman & Bazin, Photo-Litho

Wyman & Sons, Printers, 74 Queen St.

OATLANDS SCHOOL, FOR WALTON-ON-THAMES SCHOOL BOARD.—MR. ROWLAND PLUMBE, ARCHITECT.

THE SOCIAL SCIENCE CONGRESS IN DUBLIN.

THE PRESIDENT'S ADDRESS.

Lord O'Hagan, in the course of the address with which, on Monday last, the proceedings of the twenty-fifth annual Congress of the National Association for the Promotion of Social Science were opened, spoke as follows in reference to Health questions:—

I pass on to tell you what has been done, since 1861, in a department not less important than any other within the range of your inquiries,—the department of public health. In that year Ireland had, as its chief sanitary authorities, expiring parish vestries, clothed with antiquated powers, which had been vested in them so far back as the year 1818. There were some other bodies acting for similar purposes, under statutes which had once had equal application to England and Ireland, but had continued in action here after they were repealed in England. Five years after the meeting of the Congress, in 1866, the vestries were finally abolished, and the guardians of the poor were entrusted with sanitary powers identical with those existing in England and Wales. The change was great and wholesome, and was pushed to better issues when the Local Government Board was created in 1872. It was armed with large authority, and acted with energy and success. An Act of 1874 developed the sanitary system and brought it into full operation throughout the country. Under that Act, the whole of Ireland was divided into sanitary districts, called urban sanitary districts and rural sanitary districts. The urban districts consist of towns having a population exceeding 6,000. The governing body of the town is made the sanitary authority. The rural districts consist of the poor-law unions, and the boards of guardians are the sanitary authorities. There are fifty-six urban sanitary districts, and 163 rural sanitary districts; and in each of those districts a complete sanitary staff has been organised under the orders of the Local Government Board. The medical officer of the dispensary district is, in all cases, the sanitary officer or medical officer of health. The principal duty of the sanitary authorities and their officers consists in the inspection of their districts, and in taking all necessary steps to compel the removal or abatement of nuisances, provide a proper supply of water, and construct, or cause to be constructed, where it may be necessary, proper sewers and drains. The Public Health Act of 1878 repealed all previous Sanitary Acts, re-enacting, amending, and consolidating their provisions, so as to comprise in one statute the entire sanitary law as it at present exists in Ireland. The principal subjects dealt with in the Act are:—

Sewerage and Drainage.
Scavenging and Cleansing.
Water Supply.
Abatement and Removal of Nuisances.
Lodging-houses.
Markets and Slaughter-houses.
Infectious Diseases.

So that the scope of the statute is comprehensive, as the machinery for effectuating its beneficial purposes is complete. I rejoice to say that its worth has been widely recognised. The increasing activity of the local authorities is demonstrated in the most conclusive way, by the amount of their expenditure for the last six years, as it appears in the audited accounts of the Board. I shall give you the figures, and you will judge how satisfactory they are.

Year.	Expenditure by Rural Sanitary Authority.	Expenditure by Urban Sanitary Authority.	Total.
	£	£	£
1875	32,934	25,933	58,867
1876	39,676	28,567	68,243
1877	44,870	29,185	74,055
1878	48,157	37,601	85,758
1879	50,767	30,312	81,079
1880	51,927	Not yet known.	—

But even more striking than this evidence of effort and progress is that which is afforded by the amount of the loans obtained from the Board of Works in those successive years, on the recommendation of the Local Government Board, "for objects, in the words of the Public Health Act, "which may be deemed sanitary improvements":—

1875-6	£37,584	1878-9	£124,454
1876-7	41,085	1879-80	205,179
1877-8	63,056	1880-81	199,353

It is not easy to over-estimate the importance to Ireland of the sanitary work which is thus proved to have been done. It has been of double advantage, by relieving the poor at seasons of sore distress, and securing the permanent improvement of the health of the community. Again, I think I may confidently say that in a department so deeply affecting the comfort and the happiness of a people, Ireland need not be ashamed of the progress she is making, and has made. And for her that progress is especially important. Health and social morals run closely together. Cleanliness and godliness are in alliance; and wholesome and commodious dwellings are important instruments of civilisation. The squalidness of his home drives the artisan for light and solace to the public-house. The mud-cabin, with its single room and crowded foulness, is not very compatible with the formation of ordered industry; and, save in a country still marvellously pure, its inmates would be subjected to many dangers. It is of great consequence, for reasons like these, which might be largely multiplied, that our sanitary work should extend not merely to lodging-houses, but, as far as may be, to the dwellings, generally, of the humbler classes; and that the English effort in that direction, which has been so happily prosecuted under the benevolent guidance of Lord Shaftesbury, should have wide and cordial imitation here.

I do not desire to take credit to your Association which it may not fairly claim; but you will permit me to mention, in illustration of the topic I have last considered, a not unpleasant reminiscence of 1861, of which record is made in the biography of one of our philanthropic citizens. In the autumn of that year, Mr. Senior and Mr. James Haughton resolved to give some practical application to wise suggestions which had been made as to the utility of ornamental gardening in public parks such as beautifies those of London, at the expense of the Imperial taxes. They prepared a memorial to the Executive. It was received with favour; and the People's Garden rose into existence,—at once a boon to multitudes who enjoy its beauty, and a worthy monument to the genial and accomplished Viceroy,—a true lover of the country he delighted to make his home,—whose graceful statue continues to adorn it.

And, touching thus on a local theme in connexion with public health, I may be permitted also to allude to the great undertaking by which, to the lasting honour of the man who conceived it and completed it, in spite of misconception and resistance, this city receives an abundant supply of pure water, secured by a vast but most profitable expenditure, which amounts, I am informed, up to the present time, to 530,000*l*. Nor should I forget to mention, in the same connexion, the gratitude which is due to a munificent nobleman who has lavishly employed his fortune in making one of the finest squares in Europe a place of joyous resort to his fellow-citizens. I can only make the briefest allusion to a measure most worthy of attention in the department to which I am referring,—the Irish Sunday Closing Act. It was hotly contested and violently denounced; but it has succeeded beyond expectation; and its moral influence in removing, even partially, the withering curse of national intemperance, has made it a practical reform of a high order. I cannot dwell on the mode of its operation; but the results are indicated in the most conclusive way by the unanswerable evidence of our criminal statistics. In 1878, when it was in action for a few months, the number of punishable cases of drunkenness was reduced by 3,000 as compared with the year 1877. In 1879, when it was in full force, the reduction was 11,000, and last year it was 22,000, the number of offences, which in 1877 was 110,000, having fallen to 88,048. It is not wonderful that success so signal, proved by these figures and in many other ways, should already have induced wise and good men to imitate the example of Ireland in other districts of the empire, with the sanction and by the authority of the Legislature. And does it not give us a fair ground for hope that the undoubted and most salutary improvement in the drinking-customs of the wealthier classes may be gradually extended to the multitudes beneath them; and that we may be emancipated, more and more, from the cruel dominion of a vice which is to us the perennial source of crime and misery, and degrades these kingdoms in the estimation of the world?

With reference to Art questions, the President said:—

Only a word as to our relation with the department you have lately added to your programme. The conditions of life in Ireland have not been, for many a century, consistent with the successful culture of the fine arts. They could not flourish in times, too much prolonged, of turmoil and misery and social chaos. We boast an ancient civilisation, which distinguished our island when darkness brooded on the world,—connecting the learning of famous seminaries, to which multitudes flocked from other nations,—*amandati in Hiberniam ad disciplinas*,—with excellence in art, still evidenced by the venerable ruins of our churches, and by remnants of rare workmanship in the precious metals and the sculptured crosses and rich illuminations of early Christian times, which have survived ages of strife and suffering, and are still to be inspected in our Irish Academy and in Trinity College. We are proud of their attestation to the old endowments of a country which in later days has vindicated its claim to artistic eminence by the great works of Barry and Maclise, and Hogan and Foley, and others who have gone; and of living men who inherit their genius and will emulate their fame. We have been placed at a serious disadvantage. The poverty of Ireland has not permitted a large patronage of art, and those who have been distinguished in any of its branches have found irresistible attraction and abundant reward in the English metropolis. But I am glad to be able to say that here, also, we have been making substantial advances. We have never, in later days, had such appliances and helps for the rising artist as we now possess. Our National Gallery, under wise and conscientious supervision, continually undergoing fresh development, need not shrink from comparison with similar institutions on the Continent. Its contents are very choice in their character and very comprehensive in the range of their subjects. A Science and Art Museum has been established, with every prospect of giving in a short time effective encouragement to art studies as applied to manufactures. Our Hibernian Academy was never so prosperous and so well endowed. Its visitors are increasing annually by many thousands, and, notwithstanding the hardness of the times, the purchasers of pictures become year by year more numerous and far more liberal in their expenditure. I allude to those things only that I may not omit all reference to our successful action in connexion with one of the most interesting of your departments; but I do not desire to intrude on the province of my noble friend who will preside in it, and more fittingly explain the nature and extent of the improvements to which I have lightly pointed.

In the Health Department on Tuesday,

Mr. Henry C. Burdett, F.S.S., read a paper on the desirability of hospitals being placed under State supervision, in which he adduced evidence in favour of this course being adopted. He said that a review of the discussions and circumstances relating to the management of hospitals and kindred institutions in the United Kingdom during the past five years, leads to the conclusion that hospital managers are becoming alive to the fact that the system heretofore in force cannot much longer continue unaltered and unreformed. During this period no less than four influential deputations have sought interviews with the Home Secretary, with the object in each case of obtaining a Royal Commission of investigation into the subject.

He placed first amongst the circumstances which have produced so active and unanimous a desire for inquiry the many anomalies of the present system of hospital administration. In the metropolis, especially, the hospital accommodation is imperfectly distributed, and in many districts is altogether inadequate. The administration of the hospitals as at present conducted is so uncertain and unsatisfactory that inquiry is needed to secure amelioration in the interests of the poor. To facilitate a right judgment, and to furnish reliable data, Mr. Burdett had prepared a variety of elaborate statistical tables. These showed that the cost of management in sixty-one general hospitals varies from 2½ per cent. at Cork, to 27½ per cent. at the Metropolitan Free Hospital; the cost per patient per week from 9*s*. 4*d*. at the Cork County Hospital to 3*l*. 0*s*. 4*d*. at the Leeds General Infirmary. A difference of 25 per cent. in the cost of management and nearly 700 per cent. in the cost of maintaining the patients, would alone warrant the appointment of a Commission. The special hospitals show equally startling discrepancies.

As to the distribution of hospital accommo-

dation, nearly nine-tenths of the bed accommodation in the London hospitals is situated within a radius of a mile and a half from Charing-cross. The population of London resident within the metropolitan area, and exclusive of the large number of persons who are annually sent to London for hospital treatment, cannot be less than four millions and a half, one-third of which number is annually relieved at the London hospitals. Out of a total of 4,579 beds for the whole metropolis, 3,486 are provided by the hospitals situated in the narrow area above specified. The unsatisfactory condition of the present out-patient system, and especially of that in force at the large metropolian hospitals, demands reform.

The appointment of a controlling authority, endowed with adequate powers to sanction, restrict, or prohibit the erection of a new or the extension of an already existing hospital or dispensary, was, he thought, urgently called for.

Nearly everywhere the building mania seems to have blinded hospital managers, so that extravagances, going far beyond the requirements of the districts in which the hospitals are situated, and entailing half-empty wards and increased cost of maintenance, are becoming the rule and not the exception. The indiscriminate institution of special hospitals and dispensaries is productive of evil, and a controlling power is urgently called for to prevent the multiplication of so-called charities, which oftentimes, springing from unworthy motives, decoy charitable funds from legitimate channels. Such examples of ill-advised expenditure reflect directly or indirectly great injury upon the poor, for whose benefit the large sums involved were originally intended.

The social and public aspects of this great question of the right government of our hospitals alone demand an immediate investigation. When something like one million and a quarter of the population of London annually seek and receive gratuitous medical relief, and when the whole wage-receiving class in the metropolis cannot be estimated at more than 1,400,000, there is enough to warrant an independent inquiry into the whole question by a Royal Commission. This feeling is rapidly spreading, and is making itself felt in the diminished incomes which the hospitals are now receiving from voluntary sources. This difficulty will certainly increase as the public become impressed with the knowledge that it is not the sick poor at all who are being benefited, but nearly the whole wage-receiving and industrial classes, a large proportion of whom are well-paid artisans.

ON THE REFINING AND HUMANISING INFLUENCES OF ART.

PERSEPOLITAN AND ROMAN PERIODS.

Under this title a paper was read in the Art Section at the Social Science Congress, on Wednesday, by Dr. Phené, F.S.A.

The author drew attention to the fact that, as in former papers, he had selected periods for comparison in which the national features treated of were either coeval or consecutive, and in which *contrasting* effects were most prominent, and as his object was to examine the influence of art in forming or swaying national character, the periods now selected exhibited *parallel* effects from similar causes, though at a greater interval, and with powerful intermediate nationalities, hence leading to more decisive conclusions. His last paper, on the Asiatic and Roman periods, might be supposed to have included the present one; but in that he had treated of Asian art during the time of the existence of high class art-schools, established after the period he was now considering. It might be thought that so little was known of Persian art, so little of Persian character, that there was but a slender foundation for evidence. That, he urged, was the evidence; the very little distinctive Persian art, and the flimsiness of Persian character, bearing a marked relationship. The Roman character was firm and vigorous, and the area of Roman arts extensive; but the parallel lay in the complete want of original art in both nations, and with the final similar result of annihilation. Indeed, the parallel was even more marked, for, in its earlier history, Persia assimilated to Rome in the primal temperance of its citizens and soldiers, simplicity of manners, dress, and customs,—through which both countries achieved their conquests and established their solidity, and at which periods in each art was unknown. Both also succumbed under a false appreciation of art, from its debasement to bodily and physical enjoyment, rather than the mental and philosophical refinements its culture produces, with their consequent far higher and more intense enjoyment. Although a momentary digression, he could give no better example than the following:—When it was sought to introduce the Asiatic mysteries into Greece, the Greek leaders long resisted them as degrading to the morality of the people. When it was sought to introduce the gladiatorial shows of Rome into Athens, a cry was raised by the populace, "First throw down the altar erected by our ancestors to Mercy" (Lucian).*

Here was true refinement from true appreciation of art; and it would be difficult to show that it proceeded from any other cause, as they were nations of a similar faith, and the Greeks even surpassing the others in military acquirements and courage, though numerically less powerful; while, of the three, they alone understood and cultivated art; they alone had artistic originality which taught them to reject alike sensual effeminacy from the East, and the cruel spectacular revels from the West. Greece and Greek fine art alone still live in fact; Rome and Persia but in history.

The effects upon existing nations have been widely different through the Asiatic and the Roman sway, notwithstanding their parallelism in deficiency of original art; for Rome had a period of utilitarian art, in which Persia was wanting. Both plagiarised to the fullest of their ability; both raised their palaces, and enriched their capitals, not only with the wealth, but the mental powers of the nations they conquered. The stupendous remains at Persepolis, combining the materials and dimensions used by Egyptian architects with the beautiful fluted columns and the capitals of quasi-Grecian art, attest this, though, with an Oriental supremacy and appropriation, the capitals were surmounted by an Indo-Assyrian ornament and shrouded with meaningless fretwork by Persepolitan artists, like the Eastern kerchief thrown over a captured beauty, to indicate that a place would be found for her in the harem. Even the gorgeous apparel of the Persians, and their costly tents and equipments, were borrowed from the Medes, the introduction of which by the great Cyrus was a folly of age inconsistent with his youthful chaste severity. When, satiated with conquest, and with the world at his feet, he resolved to fix his residence at subjugated Babylon,† he attired himself and his retinue, for the first time, in bejewelled and gold-embroidered Median robes, and with this was changed the retirement of the Persian women, who were thenceforward companions of the march and bivouac. The Persian is the effeminate feature of art.

The curious plan of Oriental enrichments on the sides of the great staircase leading to the celebrated hall of forty pillars at Persepolis, though having evidence of the Greek chisel, was also shown not to be original, but to have been borrowed from Chinese design.

Greatly different, the author pointed out, were the ruins of Rome, worked less in costly marble than useful brick, in which she stands pre-eminent. Her edifices tell, not alone of palaces, temples, and triumphs, but of aqueducts, factories, shops, and highways,—all borrowed from the Greeks of Europe or Asia, it is true; for Asiatic and Egyptian bricks, and (as we now know, from the recent discovery of that at Silsam) the aqueducts of the East, also existed before Rome was, but wonderfully adapted and beneficiently widely spread. At the very time that Rome was sinking from the influx of sensual luxury that came in with the spoils of Asia,—from her citizens not understanding the exquisite perfection and chaste purity of Greek art,—at that moment Western Europe was being enriched in utilitarian works by her paternal Government, soon to be polluted and withdrawn. But long as was the lapse and recoil into inactivity and darkness, those nations have recovered what she has not, and what Italy is now only slowly beginning to feel, a renascency, not only of all imparted by that great civilising mother, but with a picturesque and delicious charm arising from what Rome had not, the peculiar originality of each. So that whether in the useful or higher and refined art; in music, painting, or literature, national originality, and national mind and genius, ennoble modern countries, while not despising the useful Roman foundation of art established in each. If the Italian fine-art school rose first, it should be remembered that Italy was the sole place of deposit for the sculptures and paintings brought as spoils from Greece, some of which paintings remained till the time of Pliny, and probably long after.

* Lucian in Vit. demonact., p. 1,014.

† Xenophon, Cyropædia, 1-7, p. 196; 8, p. 213 to 220, and 206.

THE BRISTOL AND CLIFTON JUNIOR ARCHITECTS' SOCIETY.

The first half-yearly meeting was held at Rupert-chambers, Rupert-street. Mr. John C. Moncrieff, vice-president, presided. Messrs. George E. Ford and Wm. E. Hill, hon. secs., presented reports, from which we take the following:—The society was first instituted on the 8th of February of the present year, and the following gentlemen composed the preliminary committee:—Messrs. Cridland, Fawn, Fudge, and McPherson, with Messrs. G. E. Ford and W. E. Hill as honorary secretaries. The first meeting of the committee was held at 31, Clare-street, by the kind permission of Mr. W. L. Bernard, and Mr. C. F. Hansom, F.R.I.B.A., was chosen president, and Messrs. W. L. Bernard and J. C. Moncrieff vice-presidents. The thanks of the members and committee are due to these gentlemen for so readily consenting to fill these offices. The secretaries deemed it advisable to obtain a list of patrons. The programme of the society contained in its list of patrons no fewer than fourteen noblemen and gentlemen. This list, however, we have now increased to 32, which comprises six peers of the realm and other noblemen, members of Parliament, &c. Lectures have been given during the session by Mr. Henry Masters, on "Sanitation"; by Mr. J. C. Moncrieff, on "Art"; and by Mr. W. E. Hill, on "Apprenticeship." We have pleasure in noting that the society has already assisted in promoting two good objects, viz.,—the new St. Saviour's Church, and the Bristol Benevolent Institution, for at the bazaars in aid of these objects the society exhibited large collections of drawings. It is greatly to be desired that the connexion already formed between the Bristol Fine Arts Academy and our society should increase, and that our members should look on the Academy not only as a place to meet in, but as a place to acquire learning and knowledge; for the advantages to be derived from the study which the Academy affords are not to be underrated. We also trust that our society may in time become linked to the Academy, as was the old society, and that the privileges enjoyed by the old society may now be enjoyed, in some parts at least, by our society.

The chairman, in moving the adoption of the report, congratulated the members on its successful bearing, and trusted that the number of members—at present fifty-two—would by the next report be at least doubled. He enumerated the advantages to be gained by the society being connected more closely with the Academy of Arts, and trusted that the members of the society would avail themselves of the opportunities of study afforded by that institution and the University College.

It was decided, with a view of further increasing the advantages of the society, and to further promote the study of architecture in Bristol, that a prize competition should be at once started, to be open to the architectural students and others connected with art in Bristol, all competitors to be non-members of the society.

A vote of thanks to the chairman, proposed by Mr. W. E. Hill, seconded by Mr. Geo. E. Ford, and unanimously carried, terminated the proceedings.

LINCOLN'S INN CHAPEL.

Some of our readers will doubtless be glad to know what is really about to be done here.

The chapel is to be lengthened one bay, and the present west window is to be taken out and re-erected in the new west wall; the stained glass in it is also to be preserved and replaced in the window. The two new side windows are to be exact copies of the present ones, the roof also. The west gallery and organ have been taken down, and are to be re-erected against the new west wall. The new seats are to be similar to the old ones. The crypt below will have also a bay added to it corresponding to the present ones, and similarly groined, and there will be a new west staircase. Every care, we are assured, is taken to preserve all interesting points. Mr. S. Salter is the architect engaged on the work

THE FISH MARKET QUESTION.

The inadequacy of Billingsgate Market and its approaches to the business of the fish trade of London and its surrounding districts seems to be generally admitted, and various suggestions have been and are being made on the subject. Among the numerous proposals that have been made is that the new Central Fruit and Vegetable Market in Farringdon-road, now approaching completion, should be experimentally used as a fish-market, its situation being convenient for the reception of railway-borne fish, as the basement is laid with rails in direct communication with the Great Northern, London, Chatham, and Dover, South Eastern, and other railways, so that the truck-loads of fish could be brought direct to the market. In the event of the experiment succeeding, it is suggested that the new market should be permanently devoted to the fish trade, as a supplement to Billingsgate, which latter market would then be chiefly devoted to the sale of water-borne fish. The needs of the fruit, flower, and vegetable trades in the City could, it is urged by those who make this suggestion, be suitably met by the erection of a new market on the site of the existing Farringdon Market.

Another suggestion, which appears to be worth consideration, although the site proposed is not in the City, is to establish a large fish-market at Bankside, Southwark, — between Southwark and Blackfriars Bridges. This site would seem to be capable of combining, to a very great extent, facilities for the reception and disposal of both water-borne and railway-borne fish, and the position is certainly not less central than Billingsgate. This proposal has been brought before the St. Saviour's District Board of Works by Mr. J Leeuw, who says :—"We have at Bankside, Southwark, an area of about 365,000 superficial feet, which can, and at proportionate small expense, be extended. The area I propose is from Emerson-street corner, Bankside, to the corner of Love-lane, which is about 270 yards; thence through Love-lane to the corner of Sumner-street, 175 yards; thence to the corner of Emerson-street, down Little Park-street, 300 yards; and thence to Bankside, 120 yards. This area has a splendid foreshore and quay, and could be had at a proportionate small expense compared with the cost which for other places on the City side would have to be paid. On the back of Great Guildford-street, now called Sumner-street, is a large area, consisting of small tenements, which are now occupied by poor people in a more or less unenviable state, and which could be purchased very cheap. Converting this into a fish-market would even be a great improvement to London, the place being exactly opposite St. Paul's Cathedral. The area I propose is next door to the Chatham and Dover Railway, Blackfriars-road, which is not only in communication with the south coast, but also with the Great Northern and Great Eastern Railways, and nearly all the railways from the north and east, by which, according to admitted statistics, the greatest quantity of fish is sent up to London." The site above indicated could, Mr. Leeuw urges, be extended eastward as far as the west side of Southwark Bridge-road, at comparatively small expense, by the removal of three blocks of buildings bounded on the south by Sumner-street, on the north by the river, and on the west by Emerson-street and Park-street. Unless the proposed market area were thus extended eastward from the first, it does not appear to us that the street approaches would be adequate; and even then it would, it seems to us, be necessary to widen Great Guildford-street and one or two other streets leading from the suggested site to Southwark-street.

Queenhithe is suggested by Mr. Frederick Todd as a site possessing the following, among other advantages :—(1) That it affords an area four times that of Billingsgate Market. (2) A position more central, standing isolated, and having approaches on all sides. (3) Approaches commensurate with the increased size of the market. (4) Proximity alike to the river and to the district and extension railways; by which latter would be afforded constant and rapid means of communication to all districts lying north of the river. Mr. Todd urges that by the selection of the Queenhithe site, there could be erected two spacious markets, an upper and a lower one, both well lighted and ventilated, each about 535 ft. in length by 193 ft. in width, (the upper market, on a level with Queen Victoria-street, for general and retail business, the lower market, on a level with Upper Thames-street, for wholesale business), and giving extensive ranges of stall for the exhibition and sale of fish, amounting collectively to nearly a mile in length. He estimates the cost of the suggested market, including the land and all interests, at 840,600*l*. We are not so certain as Mr. Todd seems to be that the realisation of this scheme would not transfer to Upper Thames-street the condition of things which, as regards congested street traffic, now prevails in Lower Thames-street. Nevertheless the proposal, of which we have only given some of the details, is worthy of the consideration which it will doubtless receive in the City.

The site of St. Katharine's Docks and that of the Custom House have also been mentioned as desirable situations for a new fish-market. Of the former site, which would be exceedingly costly, it must be said that if chosen as the *locale* of a central market for the whole metropolis it is likely to prove too far out of the centre of London for the convenience of the trade (and this objection applies with increased force to suggested sites in St. George's-in-the-East and Shadwell, however well adapted they may be for local markets); while of the site of the Custom House, even supposing that the Government would or could dispose of it, the question of improved approaches and standing-room for railway vans, fishmongers' carts, and costermongers' barrows would still have to be considered.

As to the Blackfriars site, which seems to have found favour with a section of the Corporation, we cannot see that it would be suitable. The site proposed is on the north side of the Thames, a little to the eastward of Blackfriars Bridge. Have the proposers of this site forgotten that the London, Chatham, and Dover Railway obtained powers, in the last session of Parliament, to erect a new City terminus at this very point? Room for the terminus or for the market there may be, but there certainly would not be room for both (assuming that the proposers of this site do not intend to interfere with the large and costly block of buildings known as the City Flour Mills), unless it is in contemplation to utilise the space beneath the terminus as a market.

We see that at the meeting of the Metropolitan Board of Works, on the 30th ult., a letter was received from Mr. P. E. Masey, suggesting that the site of Millbank Prison should be appropriated to market purposes. This suggestion, and others on the same subject, were referred to the Works Committee for consideration.

ROSEWOOD.

Rosewood was once, even if it be not now, a fashionable wood. It was used for costly furniture and pianofortes. There is no information respecting its first employment; but it appears certain that it became known soon after the discovery of South America. Old writers speak of rosewood cabinets and other furniture made of it. The wood is met with only in South America. The French give it the name of "palisandre"; by the Germans it is sometimes called "Palissanderholz." What they term "bois de rose" or "Rosenholz" is, in reality, an African wood, and red with yellow streaks. It seldom attains a diameter of more than 8 in., and is cut into veneers to be used as a bordering in inlaid work or for floors. But the best quality of rose or palisandre wood is found in Brazil. All the finest descriptions of this wood are exported from Rio de Janeiro. Larger quantities of inferior kinds are sent out from Bahia. The latter sort, however, is only worked for cheaper articles, the fibre having a dark red colour and but few beautiful veins. Honduras also exports a description of heavy dark-coloured rosewood, which is mostly made into drumsticks and walking-sticks. The Rio de Janeiro wood grows to a good size, and has beautiful veins. The best is chosen for veneers; but the ordinary blocks with straight fibre look very rough and knotty. Rosewood is at present sold by weight; formerly it was disposed of by trunks. It contains a very stringent oil, which must be extracted by steam or else by long exposure to the air, before the wood can be glued. It has also a powerful smell, and people who work it seem to be penetrated with it. Nothing can remove it, and the worker in it may be easily distinguished from such as work in other woods; the dust rising from the wood when it is being rubbed with sand-paper is not poisonous, but it imparts to the face of the workman a peculiar, ghastly, expression. Rosewood is, if properly worked, the most durable description of wood, and may even after a hundred years' use be polished again so well that it looks like new. It is extremely hard and strong, and becomes harder with age.

AN ELASTIC LACQUER.

A patent has been taken out in Germany for a new description of elastic and flexible lacquer, which will not peel off, and which is suitable for the coating of carriage-cloths, plans, and other articles to be folded up, as well as for wood and iron work, walls, &c., but which may also be employed as an isolating layer for damp rooms, as a means against dry-rot, and in rendering stuffs waterproof. To produce the lacquer, 50 kilogrammes of linseed oil varnish are heated up to boiling-point. In another vessel about 15 kilogrammes of lime are slaked in 20 kilogrammes of water. As soon as the lime boils, about 50 kilogrammes of hot melted raw caoutchouc are added to the lime water, and the whole is stirred until it has become thoroughly mixed. This composition is poured into the boiling varnish, the whole being stirred all the time. Further stirring takes place until a homogeneous mass is formed, which is afterwards strained or filtered, and left to cool. After cooling, the lacquer has a pap-like consistency. To apply the lacquer, it is diluted with the desired quantity of varnish, and put on with brushes either in a warm or cold state. But it is said to be better to apply it warm, as then no varnish is required for diluting it. In rendering linen waterproof, the lacquer may be put on by means of brushes or rollers. After treatment, the linen or other stuffs, paper, &c., are hung up to dry. Stuffs are perfectly dry and ready for use in two days. The product is stated to be lustrous, elastic, not sticky, and perfectly waterproof.

NEW BANK BUILDINGS AT BRIXTON.

On a recently-cleared site at the corner of Brixton-road and Canterbury-road, a block of new buildings is at present in course of erection for the London and County Banking Company. The building has a frontage to Brixton-road, 24 ft. in length, with a return frontage of 55 ft. long, to Canterbury-road, the two elevations being 40 ft. in height, and uniform in architectural design and execution. The ground-floor portion of the two frontages, up to the first-floor windows, is in Portland stone, the elevation being faced with pilasters surmounted by carved capitals. The windows are arched and recessed. The upper portion of the building, consisting of two floors, is faced with red brick, with a free introduction of Portland stone for dressings and ornamentation. The entrance to the premises is in the Brixton-road frontage, which leads into the banking-room, an apartment 22 ft. by 28 ft. Immediately behind the banking-room is the manager's room, together with clerks' room and a waiting-room. A deep basement contains the strong room, the walls of which are built in brick and iron, with cement, the room being fireproof. The two upper floors form the manager's residence, the first floor containing a spacious drawing-room overlooking the Brixton-road, with dining-room, library, and other apartments in the rear. The second floor contains several bedrooms. There is a separate entrance to the manager's residence at the rear of the Canterbury-road frontage.

The architect of the building, as well as of some shops adjoining it, is Mr. C. Val. Hunter, of Wardrobe Chambers, Doctors'-commons. The builders of the bank are Messrs. Hill & Higgs. Mr. Greenwood is foreman of the works. The adjoining shops are being erected by Mr. J. Taylor.

Royal Exchange Roof.—We have seen the drawing now on view in the Merchants' Area, and quite agree with our contemparary, the *Builder*, on the subject of its most unsuitable and objectionable character. We think that it is only necessary, as it is certainly only just, that Mr. Sang's drawing, which obtained the prize among so many others when public competition was invited, should be exhibited, to disperse all doubts as to which or what design should be carried out.—*City Press.*

ECCLESIASTICAL ART EXHIBITION AT NEWCASTLE.

On Monday evening the Ecclesiastical Art Exhibition in connexion with the Church Congress was opened at the Northumberland Rooms, Pilgrim-street, Newcastle. Close to the entrance-door Messrs. Jones & Willis display a large collection of church furniture and articles of decoration. Messrs. J. Wippell & Co., of Exeter, show brass altar vases and church-fittings such as gaseliers, lamp and gas standards, &c. In the gallery at the west of the building an entire section is set apart for the exhibits of Mr. G. J. Baguley, artist in stained glass, Carliol-street, Newcastle. In one of the side rooms of the gallery which encircles the hall are the exhibits of Messrs. Cox, Sons, Buckley, & Co., London. Adjoining is the stand of Messrs. G. M. Hammer & Son, who exhibit school and church furniture. Messrs. Doulton & Co., of Lambeth, are exhibitors of several terra-cotta reliefs intended for reredoses, &c., illustrating incidents in Scripture history, and modelled by Mr. George Tinworth. Messrs. Lavers, Barraud, & Westlake, of London, exhibit a two-light window, containing figures of SS. Ambrose, Athanasius, George, and Katherine, together with three designs for decoration.

The Loan Collection contains some interesting items, including a collection lent by Mr. Wm. Bragge, F.S.A., of Birmingham, of 124 Russo-Greek "Icons," or religious pictures, chiefly in brass, many enamelled; some painted and mounted in silver, and silver gilt; twenty-four are crucifixes, sixty-four are single plaques; the remainder are diptychs, triptychs, &c. The smaller icons are in very general use amongst the Russian peasantry, and also amongst the wealthier classes, those worn by the latter being, however, of a much more costly character—some are even of gold. When a peasant is about to send his son to service in the army, he often takes from his neck the icon that he and his forefathers have worn, and places it with his benediction on the young soldier's breast. To the soldier himself the icon becomes a memento of his country, of his family, and of his religion, —of his country because it usually bears the effigy of some Russian saint, very frequently the patron, St. Nicholas; of his family, for this icon may have been an heirloom; of his religion, for when about to offer his prayers he opens his triptych or diptych and kneels before it as a portable altar. He carries it, suspended to his neck, through the vicissitudes of a campaign; and when, his labours ended, he returns to his native parish, he often lays his cherished possession upon the iconostasis of his village church, as a votive offering to commemorate his preservation. The subjects most frequently represented are events in the life of the Redeemer or the history of the Virgin Mary, Russian saints with their appropriate symbols, and copies of certain local pictures of the saints, some of which are highly venerated. They usually consist of the name of the saints, contracted in the most arbitrary manner, or of some short sentence descriptive of a portion of the picture, as "The Son of God," "The Angels of the Lord," and the like; though sometimes, as in the case of the crucifix and of the religious medals, the inscription is a text or a prayer. The costumes of some of the figures exhibit, in an interesting manner, the peculiarities of Greek ecclesiastical vestments.

Mr. Henry E. Franks exhibits an interesting collection of rubbings of monumental brasses. Mr. C. Hodgson Fowler, Mr. B. Edmund Ferrey, and Mr. James Hicks are among other contributors to the loan collection.

BIRMINGHAM.

Extensive Street and other Improvements.—On the 23rd ult., Mr. J. Thornhill Harrison, C.E., one of the inspectors of the Local Government Board, held an inquiry at the Council House, Birmingham, relative to the application of the Corporation to borrow 127,700*l.* for works of sewerage and street improvements, for providing public baths, and for market and fire-brigade purposes. The Town Clerk explained the various purposes for which the amount of loan was asked and the sums required for each item in the application. The first were for 11,025*l.* for the purchase of the site for the central fire-brigade station, and 10,000*l.* for the erection of the station. The amount of the builder's contract was 9,355*l.*, and the architect's commission, salary for clerk of works, &c., were estimated at 645*l.* They would also require for the construction of a market-house and other conveniences on the site of the present Smithfield Market, for the purposes of a vegetable market, 21,000*l.*; for the purchase of the leasehold interest in the Woolpack Hotel, for the widening of St. Martin's-lane and Jamaica-row, 7,400*l.*; for the erection of shops, buildings, and hotel in St. Martin's-lane and Jamaica-row, and other works in connexion with the market in consequence of the purchase of the Woolpack, 14,000*l.*; and for completing the purchase, from the governors of the Grammar School, of certain freehold land in Spiceal-street for the enlargement of the fish-market, 8,400*l.* Dealing next with the 22,000*l.* required for the erection of public baths in Monument-road, the Town Clerk explained that such provision in that quarter would meet a great want, and would complete the bath accommodation in the four districts into which the borough might be divided for that purpose, viz., north, south, east, and west; 30,000*l.* were also required for the Cole Valley sewer from Stratford-road to Tyburn, and the branch sewer from the same to the outfall sewer in Muntz-street; 1,000*l.* for effecting improvements in Snow-hill, Henrietta-street, Hampton-street, and Constitution-hill; 2,500*l.* for the purchase of the leasehold interest in Nos. 1 and 2, Moor-street, and 15 and 16, Bull-ring, for the purpose of widening and improving these streets; and 300*l.* for widening and improving Balsall Heath-road bridge and contributing one moiety of the cost. The amount of 75*l.* set down for legal expenses made up the amount of loans required to the total,—127,700*l.* Alderman Avery explained, with reference to the sewerage scheme, that the area of Birmingham was 8,400 acres, of which 956 acres were in the Deritend and Bordesley district, and naturally drained towards the Cole. Up to the present no proper system of sewerage or treatment had been adopted, because no resources had been within the reach of the authorities. In Deritend and Bordesley there were at present twenty-four miles of streets and twelve miles of sewers. The population was only 7,500, but was very much on the increase, and the time had arrived when the urgency of the question demanded attention. It had been considered much more convenient for one authority to undertake the whole of the work, charging a certain sum to each constituent authority, according to the extent which they used the sewer. It would be a very complete and effective scheme, and would provide ample accommodation for 100,000 persons, whereas 16,600 was at present the actual population of the area. The Borough Surveyor said the estimated cost, according to the route planned, would be 28,272*l.*, exclusive of compensation, or 29,560*l.* by the alternative route, by which the expense of 700 yards of public highway would be saved.

The New Central Fire Brigade Station.—On the 30th ult. the memorial-stone of this building, now in course of erection for the municipality, was laid by Alderman Deykin. The site is in the Upper Priory, upon the line of Corporation-street, and appears to be one of the most suitable that could have been selected. Over 20,000*l.* will be expended in providing the premises, 11,025*l.* being given, as above mentioned, for the purchase of the site, and 10,000*l.* for the erection of the buildings. The arrangements are intended to be the most complete in the kingdom. There will be accommodation in the engine-house,—the internal measurement of which is 95 ft. by 17 ft.,—for six engines, and the stabling will have room for a similar number of horses. There will be workshops and residences for the superintendent, the assistant superintendent, and the firemen, with their families, while a drill-ground, 150 ft. in length and with an average width of 40 ft., is included in the plans. There will also be a large washhouse, with a cover for washing the hose, with a lofty chamber for subsequently drying it. Over the engine-house will be a spacious store-room, a loft, and a reserve room for the firemen when not on active duty. Two bath-rooms will be so placed as to be available for the use of families as well as of the firemen, without their encroaching upon the working departments. The contract for the erection of the fire-station has been secured by Mr. W. T. Bennett, and the work is being proceeded with with all possible expedition. Messrs. Martin & Chamberlain are the architects, and Mr. Clapp is the clerk of the works.

The New Free Library.—The nineteenth annual report of the Birmingham Free Library Committee has just been issued. In it the committee say that the reconstruction of the library buildings in Ratcliff-place is now making satisfactory progress, although in the early part of the year difficulties occurred which caused much delay. The architects are of opinion that both the Lending and Reference Libraries will be ready, if not by the end of the present year, certainly early in the year 1882. With reference to the art gallery, the report details the course of events leading to the commencement of the new art gallery, following on Mr. Tangye's munificent offer.

A RECLAMATION.

MR. BEER'S MAUSOLEUM.

Monsieur,—Une circonstance fortuite me fait connaître tardivement une erreur qu'il est de mon devoir de vous signaler. Cette erreur remonte au 18 *Mai*, 1878, mais, pour n'avoir pas été relevée plus tôt, elle n'en est pas moins réelle, et j'espère ainsi que vous m'accorderez de la rectifier.

J'ai en effet étudié, à la demande de mon ami, feu M. Jules Beer, les projets du monument exécuté au cimetière de Highgate; mes projets ayant été approuvés, je les ai complétés par un modèle au $\frac{1}{4}^{eme}$ de l'exécution, permettant de connaître, dans toutes ses parties, l'appareil de la pierre de la construction, et à ce modèle j'ai joint, outre les dessins au $\frac{1}{4}^{eme}$, tous les détails, grandeur, tant des profils que des ornements. Vous comprendrez ainsi ma surprise, quand, feuilletant votre estimable journal, j'y ai trouvé, au volume xxxvi, No. 1,841, du 18 Mai, 1878, pages 512 et 513, une perspective du monument de la famille Beer, et une notice en attribuant la composition et les dessins à Mr. John O. Scott, architecte.

C'est là une erreur qu'il faut attribuer à ce que l'exécution de mon travail, s'est, il est vrai, faite sous la direction de Mr. Scott, auquel la publication de votre journal aura échappé et qui tiendra sûrement autant que moi à réparer une omission involontaire.

Je n'hésite donc pas à vous la signaler, persuadé, que vous voudrez donner satisfaction à une réclamation dont le bien fondé ne saurait vous échapper.

Je vous remercie d'avance et vous prie d'agréer, monsieur, les expressions de ma parfaite considération. W. Bouwens, v. d. B.

Paris, Sept. 6.

*** On mentioning this communication to Mr. J. O. Scott, that gentleman writes us:—

It is quite true that the first design for Mr. Beer's mausoleum was made by M. Bouwens, of Paris, and had I been at home when the view appeared in the *Builder* I should certainly have taken care to state the fact. I did not know that any view had been published. The circumstances were as follow:—Mr. Beer procured a complete design, with full-sized drawings and a model, from M. Bouwens. He inquired of me through a mutual friend whether I should have any objection to superintend the erection of the mausoleum, and after some discussion it was agreed that I should do so, but should be at full liberty to make any alterations in the design which I thought desirable. I then set to work and remodelled the design, altering it very considerably both in its proportions and in its detail, and so it has been built. It is a joint work, as the leading ideas of the first design have been kept to, while it has been much altered in all other respects.

I shall be very glad if you will communicate this to M. Bouwens, with my best compliments, and I regret that such an oversight should have been made. If I remember rightly, M. Bouwens quite agreed to my dealing with the design as I might think best; but I am not clear about this, as it was only told me by Mr. Beer by word of mouth. J. Oldrid Scott.

SURVEYORSHIP ITEMS.

Lewisham.—At a meeting of the Board of Works for the Lewisham District, held on Wednesday, the 28th of September, Mr. E. van Putten was appointed assistant surveyor to the Board. There were between fifty and sixty applicants for the position. Mr. van Putten was articled for three years to Mr. C. W. Whitaker, of Great George-street, Westminster. Since then he has been engaged in the superintendence of various public works.

PATENT RECORD.*

APPLICATIONS FOR LETTERS PATENT

3,993. W. Wyman, Gloucester. Heating water for baths, &c. Sept. 16, 1881.

4,001. J. Shanks, Barrhead. Baths, sinks, &c. Sept. 16, 1881.

4,010. J. Imray, Southampton-buildings. Cooking-stove. (Com. by La Société des Spécialités Mécaniques réunies, Paris.) Sept. 17, 1881.

4,020. G. West, New Lenton. Smoke-consuming apparatus. Sept. 19, 1881.

4,033. W. Wright, Plymouth. Flush-cisterns for water-closets, &c. Sept. 19, 1881.

4,042. S Clark, Islington. Gas and oil stoves for heating and lighting. Sept. 19, 1881.

4,050. A. Martin, Woolwich. Springs for doors, &c. Sept. 20, 1881.

4,054. E. De Pass, Fleet-street. Concrete materials for blocks for paving and building. (Com. by W. Hunt, New York, U.S.A.) Sept. 20, 1881.

4,065. W. White, Abergavenny. Building damp-proof walls, &c. Sept. 21, 1881.

4,077. C. H. Pennell, New Quay. Holding and controlling blind and other cords. Sept. 21, 1881.

4,083. W. Richards, Norwood. Apparatus for measuring water. Sept. 22, 1881.

4,085. C. H. Murray, Southwark. Apparatus for shaping and moulding clay for bricks, tiles, &c. Sept. 22, 1881.

4,090. W. Saunders, Stepney. Cleansing floors, &c. Sept. 22, 1881.

NOTICES TO PROCEED

have been given by the following applicants on the dates named.

September 20, 1881.

2,131. F. H. F. Engel, Hamburg. Petroleum or hydro-carbon cooking and heating stoves. (Com. by H. Kock, Hamburg.) May 16, 1881.

2,132. J. Hurst, Brighton. Portable crane for builders, &c. May 16, 1881.

2,149. T. F. Shillington, Belfast. Fireplaces or stoves. May 17, 1881.

2,160. E. S. Harvey, Tottenham, and J. Brodie, Bloomsbury. Attaching knobs to door, lock, and other spindles. May 18, 1881.

2,171. R. Stone, King William-street. Burning lime, cement, bricks, &c. May 18, 1881.

2,174. J. Walker, Leeds. Manufacture of bricks, tiles, &c. May 18, 1881.

3,318. W. H. Poole, Brixton. Furnaces. July 30, 1881.

September 23, 1881.

2,222. A. McMillan, Thornliebank. Mode of applying springs to doors. May 21, 1881.

2,229. S. H. Ogden, Manchester. Firegrate screens. May 21, 1881.

2,254. H. Wedekind, Fenchurch-street. Brick-pressing machines. (Com. by O. Hoffmann and H. Dueberg, Berlin.) May 24, 1881.

2,759. S. L. Coales, Newport Pagnell. Door latches. June 24, 1881.

3,037. J. Gooddy, Wombwell. Securing the joints of earthenware and other piping. July 11, 1881.

ABRIDGMENTS OF SPECIFICATIONS

Published during the Week ending Sept. 24, 1881.

4,604. G. E. Waring, jun., Newport, U.S.A. Sewers, &c.

The main sewer-pipe gradually diminishes in size, and is provided with branches, on the ends of which automatic flush-tanks are situated, and it has connecting sewers with the houses which form open flues to the tops of the houses. Subsoil drains are laid in the same trench as the sewer-pipes to carry off the storm-water. The pipes are supported by broad piles driven into the ground. The joints are made by wrapping strips of paper round the ends of the pipes. Nov. 9, 1880. Price 10d.

440. T. Jackson, Edinburgh. Apparatus for supplying, heating, and circulating water for domestic purposes.

A high-pressure boiler is placed in the kitchen range, which is connected with the supply-cistern at the top of the house, and in which the water is heated and carried to the service-cisterns on each floor. To prevent accidents to the boiler, when the supply-cistern is empty another series of pipes is led from each of the service-cisterns back to the boiler, which can be opened in case of need. Feb. 2, 1881. Price 6d.

448. E. A. Rippingille and J. D. Rippingille, Aston-juxta-Birmingham. Lamps and lamp-stoves.

The height of the oil in the tank is indicated by a prism of glass mounted in the top of the tank. When one chimney only is employed in an oven, as described in the specification of Patent No. 680 of 1880, a channel is formed on one side, which is in communication with the top of the chimney, thereby heating the lower part of the oven. The stoves may be constructed with more burners and chimneys intermediate of the side-burners, and forming an oven on each side. Feb. 2, 1881. Price 6d.

498. E. Edmunds, Fleet-street. Kilns.

The kiln is a gallery or bricked chamber, under which atmospheric air is allowed to circulate. The gallery contains a certain number of trucks, with bottoms and sides of refractory material in which the cement or bricks, &c., are placed. The bottoms of the bricks form the sole. In the middle of the length of the gallery are placed underneath four recuperators of heat in pairs, two for air and two for gas. Twelve flues are placed above them, terminating in mouths on a level with the sole. The hot air and gases leaving these mouths ignite, burn the materials in the trucks, and are then sucked in to the mouths of the other set of recuperators, and thence pass to the draught chimney. A gazogene on the Siemens system is placed at the side and the back of the kiln. (Com. by C. Amand, Tournay, Belgium.) Feb. 5, 1881. Price 8d.

600. J. D. Sprague, Norwood. Cords for suspending pictures, &c.

The strands of wire or hemp, flax, &c., are twisted to form a line or cord, but have loops or eyes at regular intervals to receive the hook of the picture, &c. Feb. 11, 1881. Price 4d.

610. P. Stuart, Edinburgh. Manufacture of Paving, Floors, &c.

A layer of small stone is first laid. On this is placed a layer of concrete, composed of pulverised oxide of iron and crushed stone, &c., mixed with cement and water. For outside paving, grooves are made in the concrete, in which iron rods are laid at right angles to each other. On this surface a composition of granite, with pulverised oxide of iron, hæmatite iron ore, and cement is spread and levelled. This composite pavement is laid in alternate squares, the layer of concrete in each alternate square projecting beyond the upper layer of granolithic composition. Feb. 12, 1881. Price 6d.

705. F. W. Fletcher, Westminster. Metal substitute for putty.

A strip of thin, hard metal, curved in its width, is fixed to the glazing bar in such a position that one edge of its convex surface shall press against the surface of the glass. (*Pro. Pro.*) Feb. 18, 1881. Price 2d.

706. J. H. Jack, Edinburgh. Close and open cooking ranges.

This relates to the construction of a flue-doorway in the vertical back or cove-plate, leading right into the central back-flue over the hot plate. The upper outer edge of this flue has a flat door. (*Pro. Pro.*) Feb. 18, 1881. Price 2d.

707. R. Brierley, Preston. Securing window-blinds to rollers.

A groove is formed lengthwise in the roller to receive the end of the window blind, which is secured therein by a strip of wood or metal. (*Pro. Pro.*) Feb. 18, 1881. Price 2d.

727. S. H. Adams, Leeds. Apparatus for flushing and ventilating drains, &c.

A syphon has an internal smaller syphon, the discharge through which withdraws the air from the larger syphon, and brings it quickly into action. A small hole is made in the inlet leg of the large syphon above the point at which the liquid is drawn off, so that when the water in the tank falls below this hole, air is admitted and the syphon is put out of action. For ventilating drains, the gas from the drain is made to pass through a chamber, through which also a current of fresh air is continually passing, which dilutes the gas and renders it less injurious. Feb. 19, 1881. Price 6d.

1,476. R. H. Brandon, Paris. Producing designs and ornamentation upon artificial ivory.

The designs, &c., are produced by compression in heated dies or moulds, in connexion with which an ink or sizing is used which carries a colour. The pressure is applied long enough to cause an absorption of the ink or colour, and the heat is applied afterwards. (Com. by J. S. Hyatt, U.S.A.) April 5, 1881. Price 3d.

* Compiled by Hart & Co., Patent Agents, 28, New Bridge-street, E.C.

COMPETITIONS.

Fulham Infirmary.—At the meeting of the Board last week, a letter was read from the President of the Institute of Architects, naming three architects for the Board to select one to advise them on the merits of the twenty-six sets of plans for the proposed new infirmary which had been received. The fee to be paid was 100 guineas. The architects named were Mr. H. Currey, Mr. P. C. Hardwick, and Mr. E. l'Anson. Ultimately Mr. Currey was selected.

Museum, Dublin.—Sir, I sent a note a few days ago asking for an extension of time in connexion with this competition, and in reply the secretary wrote, "It is not considered necessary to extend the time, as the number of applications for the conditions for the competition has been very large, and there have been but two applications for the extension of time."

I have now to suggest that those among the intending competitors who find the time too short should at once write asking an extension of at least a month. It is quite evident that no architect whose time is otherwise much occupied can do anything like justice to this competition within the time allowed at present.

AN ARCHITECT.

Cleopatra's Needle. — The second bronze cast of the sphinxes, executed by Messrs. Young & Co., is ready for erection, and only awaits the necessary preparations for its removal to the base of the needle.

ON THE USE OF THE WORD "NATURE" IN REFERENCE TO ART.

SIR,—Your own desire, as that of your correspondents, is, doubtless, to elicit truth for the advantage of the future. I need not, therefore, apologise for addressing you again on the subject of the use of the word *nature* in reference to art. "In the multitude of councillors there is wisdom"; albeit, in the discussion in council there may appear to be some confusion.

In all that I write upon art I have a mathematical calculus ever present to my view and to guide me, though I may avoid mathematical expressions in my discourse. Now, the very fact that there is wisdom in the multitude of councillors bears upon an affirmation of mine to which you take exception, for it depends upon the law of probability that, in the aggregate, men will err as often on the one side as on the other of the mean of truth, and so, from the average of opinion, common sense is attained. The neutralisation of opposite views ultimately causes men to tread in the middle course. This law of probability obtains in forming a just estimate of nature's intent in all kinds of natural phenomena; by its means we may arrive at a just conception of the good and the beautiful. I, therefore, venture to repeat with confidence what I stated in my letter of the 3rd ult.,—that the general tendency of nature is to the middle course between opposite extremes. If this were not the general tendency of nature, then nature's general tendency would inevitably be either to the extreme of excess or to the extreme of defect. The logician will understand that this position is incontrovertible. Some persons, indeed, might possibly argue that there is no general tendency or direction in nature; that nature is a mere chaos of manifestations. This assumption would at once sweep away the idea of moral governance,—direction,—in nature. If this were true, it would, of course, be immaterial what course men should pursue either in conduct or in art.

But to affirm that the general tendency of nature is in a course between opposite extremes is to affirm that the general tendency of nature is towards the symmetrical or proportioned, *i.e.*, that its general tendency is a moral tendency, whereas if it were to either extreme of excess or of defect it would be immoral, just as we know it is in one section of nature, the human. In your leader of the 24th ult. you bear witness to the truth that nature recognises the force of the axiom *in medio tutissimus ibis*, in the following passage, "Anything like absolutely geometrical symmetry is, in fact, the exception in the forms of the vegetable kingdom, and in the animal kingdom even is only to be found in the main disposition not in the details. The hands are symmetrically disposed, but the hand itself is quite unsymmetrical." Just so, I should have said, if regularity had been substituted for "symmetry," and irregularity for "unsymmetrical," for the human form, which is regarded as the highest type of animate existence, is neither too regular nor too irregular; its highest beauty depends upon its being proportioned or balanced between extreme regularity and extreme irregularity.

It is a mistake to confound the symmetrical or proportioned with the geometrically regular; the regular geometrical figures are abstractions seldom or never realised, with mathematical exactness, in the concrete, and they are in all cases extreme forms. The symmetrical in its true sense means the proportioned, not the geometrically regular, and the proportioned in every species of phenomenon is that which lies between its extreme manifestations.

Notwithstanding it is a province of art to give to airy nothings a local habitation and a name, I would rather not for my own part, forcibly as you argue for it, admit the word "metaphysics" into the contention, partly because metaphysics appear to me to be wholly beside the question at issue, and partly because our friends the artists are "so absolute" that its use might frighten them from the discussion. The question is not now how we should denominate the various subdivisions of nature, but what meaning it would be most expedient to attach to the word "nature" to ensure greater unanimity in arguments upon the principles of taste. The prevailing notion amongst one section of artists and critics, which vitiates art discussion, is this,—that whatever is to be found in nature sanctions its use in art. If this were true, nature would sanction anything and everything in art; for nature, as defined by Professor

Huxley, is the all-including. He defines it thus: as "the sum of phenomena presented to experience; the totality of events, past, present, and to come." The word "nature" in this, its all-including sense, and as I would have every artist and critic accept it, brings us at once to our bearings in art discussion; for as anything and everything are to be found in nature, we are at once compelled to inquire whence the sanction for the acceptance of certain conditions, and the rejection of certain other conditions, in art? We reply that this is to be found either in their appositeness or in their inappositeness to correct judgment.

Art treatment, therefore, broadly divides into the imitation of the concrete,—realism; and the presentment of the abstract,—idealism. The first is the primitive, easier, and lower aim of art, because it is merely imitative; nature may be taken as it comes, it does not involve rational choice. The second is the later, more difficult, and higher aim, because it involves culture, considerable study, a knowledge of principles, and rational choice; nay, I believe I may even say, moral choice. Moreover, the definition of the word "nature" recommended for adoption shows us that the ideal is nature as well as the real. To the thinker it is the better nature of the two.

Mr. Colling thinks, in common with many other artists, that there is some position outside and apart from nature, from which it is a virtue to study nature. He and they cannot grasp the simple fact that there is no such position, and that there is nothing but nature to be studied, if we study at all; that the very worst and the very best productions of either human or external nature are nature, and equally the effects of natural laws, either special or general.

Mr. Colling is right, however, when he states that all ornament must have a geometrical basis. It cannot have any other. Whatever can be measured and delineated is geometrical. But if he means by this that all forms of growth exhibit a tendency to the regular geometrical figures in their arrangements, he is wrong. The most eccentric form is as geometrical as the most regular. Japanese ornament is as geometrical as the Greek, but it is not so symmetrical, and it is also possible for ornament to be more geometrically regular and yet less symmetrical than the Greek. The three terms of the scale of geometrical differentiation are the following:—

Extremely irregular configuration.	Symmetrical configuration.	Extremely regular configuration.

And the general principle which should sanction the leaning to either the one or to the other of these characteristics is that of adaptation to purpose, and the sanctity of the purpose is measured by the ratio of its goodness. But I fear I shall not yet be understood.

W. Cave Thomas.

VERGERS AND CATHEDRALS.

Sir,—The letters of "F.S.A." and "C. T. H." which have appeared in your journal are well timed; and as the subject has been so ably opened, it is to be sincerely hoped that you will use your powerful influence in mitigating a few of the hindrances which forbid (to the interested visitor) the full enjoyment of most of our cathedral churches.

"C. T. H.," as your readers have doubtless seen, refers to Salisbury. A visitor to the cathedral last week related to me almost word for word that delectable dissertation with which "C. T. H." entertained your readers in your journal of September 17th.

I visited the cathedral this week, and to my mute and joyful astonishment (without either tip or request) the verger volunteered to let me enjoy the mysteries of the choir in peace. I thought at the time that the correspondence in the *Builder* was bearing fruit.

The junior verger was equally obliging; for he in like manner, without demand from self, asked if I would care to remain in the chapter-house, an offer which was most gratefully accepted; so that, unlike "C. T. H." (to whom I am deeply indebted), I had an opportunity of feasting my eyes on a chapter-house second perhaps only to Westminster.

As regards York, my experiences last July were much the same as those of "F.S.A."

Having spent three weeks this summer at Lincoln I can add to "Mr. Harry Hems's" notice of the civility of the Exeter officials. I had ample opportunity of noticing the vergers of Lincoln Cathedral, Messrs. Logsdail and Barnett.

Mr. Logsdail has studied his subject well, and being always on the spot, has to a certain extent grasped the church as a whole. Whether to large or small parties, or to individuals, he seems most anxious to teach them as much as is possible while they are under his direction; of course, some appreciate this, others do not.

So that, at least in Lincoln, the visitor is not pestered by the up-and-down-hill shilling-seeking illiterate verger, so common, I am sorry to confess.

Yesterday I was in Wells, and the vergers here hand you a card upon which is printed a short description of the choir, &c., and the visitor is left to himself.

Let all deans and chapters of our cathedral churches follow the excellent example set them by their brethren of Wells.

If you, sir, through the powerful influence of your journal, could secure for students and others the privilege of making notes without leave, you will at least have the heartfelt and lifelong gratitude of one Student.

A WALK IN KENT.

Many are the places of historic and architectural interest that, not included in any regular tour, and unknown to excursion "there-and-back" travellers, remain in the almost untrodden freshness of their early beauty. The architect or the artist may plan numerous journeys which, in the compass of a few miles, are full of almost unknown beauty.

Such a journey was commenced one bright day not long since by a short ride to Edenbridge. The town has many old houses which, under modern lime-wash, show their massive timber construction, and some of the rooms are remarkably quaint with wrought oak beams and wooden ceilings. A narrow turning from the High-street to the church is suggestive of similar picturesque nooks in ancient towns and villages. Some Norman traces may be noticed in the church.

Through winding lanes, bordered by early primroses, Hever is soon reached. One of the smallest of the quiet villages of Kent, it seems as though three long eventful centuries have wrought but little change there. Two or three houses are newly built, otherwise, as the visitor ascends the hill where stands the village church and school, and inn, he sees the Hever where Sir Geoffrey Boleyn, mercer and Lord Mayor, retiring from city life, bought an estate; where his grandson, Sir Thomas, completed the castle thereon founded; and where gentle Anne walked and studied with her French "gouvernante" in the early, happy years of her short eventful life. The moated castle, the Boleyn chantry and tomb in the church, and the sign of "Henry VIII." on the village inn, recall the names of those whose presence gave fame to that country side.

A mile or more over the sand hills, through hop-gardens and flowery hedgerows and lanes, and the traveller arrives at Chiddingstone. That part of the village that adjoins the church is a rich specimen of timber construction, forming, with the church on one side, and the park at one end, a delightful picture. In the park, immediately behind the houses, are some prominent masses of rock, one of which, somewhat resembling a huge loaf, has been claimed to be the chiding stone where contentious parties met to have their differences decided. A solitary gateway, in the pseudo-Classic style, and bearing a sixteenth-century date, stands in the park near the rocks.

After walking rather more than a mile along the road, the traveller arrives at two lodges in the mock-fortress style; turning in a gateway adjoining the left-hand lodge, a beautiful avenue leads to the Classic "groves of Penshurst," nearing which the river crosses under the road and meanders among the meadows and pollards that skirt the village. Here the beauties of Kentish scenery are seen to advantage clustering round the ancient home of the Sydneys. Here the charms of nature, history, and archæology unite, and the traveller will be willingly mindful of Southey's words and

> "Tread
> As with a pilgrim's reverential thoughts
> The groves of Penshurst."

Under some quaint houses, where the beam of the lich-gate sets forth the bright words of inspiration,—"My flesh also shall rest in hope," is the principal entrance to the churchyard, a secluded resting-place shaded by the walls of Penshurst-place, and the church, partly rebuilt and modernised. Both should be seen. The former, the residence of Lord de L'Isle, has an almost unique example of fourteenth-century work in its hall, where the open timber roof, centre hearth, minstrel's gallery, and massive oak tables, and many other objects of interest, remain *in situ* to interest the visitor.

Another glimpse of the village, then along the park, where the famous oak still stands, two miles more through Kentish lanes, and then, as the shades of evening fall, to await the train at Penshurst Station. H.

"A VICTORY OVER SEWER GAS."

Sir,—I have read Sir Henry Cole's letter under the above heading, on pp. 419-20, and as it deals with what I have had considerable experience in for years back, I beg to say a few words upon the subject. Firstly, I would point out that the title seems to me to be a misnomer, as what Sir H. Cole and Mr. Mineard are really trying to fight is not "sewer" gas, but rather drain and soil-pipe gas; hence the word "sewage" would have been more correct. In my own practice with house-drainage, a "victory over sewer gas" is not worth while talking about, much less crowing over, as the sewer gas is easily shut off, practically speaking, by the insertion of one of my disconnecting ventilating-traps between the house and the sewer. The real fight, then, begins in protecting the inmates of the house from themselves, and it is really this fight which Sir H. Cole gives a description of on pp. 419-20, and on plates Nos. 1 and 2. Upon examining the plans, I find, as it seems to me, as a practical tradesman, that the writer is rather premature in claiming the "victory"; for his own account shows that there has really been no battle, but only a slight skirmish or two. So far as I can judge from the plans, when the real battle comes the upshot or result of the fight may be defeat and not victory, and that, too, notwithstanding the enormous forces employed.

The idea of using a heating force to bring the current of air *down* the soil-pipe and along the drain and then up a special shaft, is an old one. It will be found in the provisional specification of a patent by Mr. John Honeyman, F.R.I.B.A., dated 6th of February, 1868, No. 404, and so far as Mr. Mineard's "improvement," if any, is concerned, I hardly think the game worth the powder. We are told the expense for gas will be about 1s. per week, or 2*l.* 12s. a year; but, even with this expense, there is no real guarantee of safety, for it is well known that such an upcast shaft as is shown (it is only marked 3 in., too) will draw its supply of air from the openings nearest the heating-chamber, and so if the joints at, or stones over, the intercepting chamber, were not tight, no ventilation of the drain, even, might take place, far less of the soil-pipe as intended; then, as no traps are shown on the soil-pipe, what would protect the house? Further, to make this plan of Mr. Mineard's work, the gas must be kept burning day and night; while to make it work properly and against the action of the chimneys, I fear both Mr. Mineard's 3-in. pipe and his shilling's worth of gas a week are far too little.* Sir H. Cole's deductions from the experiments described by him are not warranted, I consider, and his recommendation of the plan so highly is far too premature, and, I may even add, dangerous. Too high laudation of newly-hatched plans has done a great deal of evil, and should be guarded against, and especially by scientific men of position; it is not every duckling that turns into a swan.

Permit me further to point out various other bad points in the plan of the drainage on No. 1 sheet.

1st. About 20 ft. of the drain from the servants' w.c. seems to be unventilated (if ventilated properly the ventilation downwards of the soil-pipe would be "waved").

2nd. Owing to the want of traps on the closets above, or if any leakage existed in the soil-pipe, then at the first chance foul air would come out, which, instead of only being from the soil-pipe alone, would in this case be from the drain also. This is anything but an improvement upon plans published years ago.

* Why not keep the drain out of the house altogether and so save both risk and gas expense?—W. P. B.

3rd. Fitting up a bath without a water-trap on its waste-pipe is another mistake, and so with the lavatory basin.

4th. No trap on the sink in the scullery is another fault.

5th. Putting in an apparatus to blow off stinking air in a town house continuously, even when there was no wind to carry it off, is hardly a plan to be recommended at the present day, when plans for the prevention of the pollution of the atmosphere of our towns and cities are under consideration.

I might say more, but I should first like to see what Sir Henry Cole has to say in reply to the foregoing criticisms. W. P. Buchan.

THE LATE MR. E. C. SAYER.

A few particulars as to the career of the late Mr. Edwin C. Sayer may not be thought an undesirable record, inasmuch as he was an individual much known and esteemed by the architectural profession, to which he belonged.

He was a native of the West of England, where he resided until the completion of his term of articleship in Bristol. Coming to London in the early part of 1841, his first engagement appears to have been as an assistant among the already numerous staff in the office of Messrs. Scott & Moffatt, of Spring Gardens,—subsequently that of Mr. (Sir Gilbert) Scott alone. In the May of that year I myself entered the same office, in a similar capacity, as did also Mr. J. K. Colling in the following November; and thus commenced an acquaintanceship with the deceased which was maintained to the last. Upon quitting Messrs. Scott & Moffatt's, he migrated temporarily to Norwich, to the almost equally busy office of Mr. John Brown (familiarly known as "Brown of Norwich"), and then, returning to London, he became attached to that of Mr. Sydney Smirke, where he met with the late Mr. James Wylson, and thus, in conjunction with Mr. Wylson, Mr. Colling, and myself, he, towards the close of the year 1842, helped to found the "Association of Architectural Draughtsmen," "reconstructed" in 1847 as the "Architectural Association," now so flourishing and useful. Of this original association Mr. Sayer was the first secretary, and a letter from him on the subject appeared in the *Builder* of January 8th in the present year.

There was yet another distinguished London office with which he became connected, viz., that of the late Mr. Pennethorne, of Whitehall, whom he assisted in many important professional works. His concluding engagement of this nature was in a smaller sphere, but one that again appeared well to suit his predilection for Classic rather than Gothic art. As right-hand man to the late Mr. Humbert, of Fitzroy-square, the architect of the Royal Mausoleum at Frogmore, and also at Sandringham for the Prince of Wales, his abilities were largely exercised in the carrying out of both these works; and at Mr. Humbert's decease he had the satisfaction of finding that a handsome legacy from that gentleman was a further proof of regard for his faithful service. Such instances are, unfortunately, too rare.

Being always a devoted admirer of Sir Christopher Wren's works, Mr. Sayer procured access to the model of the first design for St. Paul's Cathedral at a time when it was less known than it is at present; and in his leisure hours he prepared a series of large and careful drawings, to scale, of that proposed edifice. These he cherished for a long while in his own possession, but I think that a few years ago he presented them to the Institute of British Architects.

Owing to the peculiar bent of his disposition, and to his naturally reserved habits, he was never ambitious to set up in practice for himself, preferring to work with and for others, until some time ago he retired from professional life, to devote himself more to those literary pursuits which were ever his special delight. He was a great reader of standard books in various languages; also of the best productions of a lighter kind. Being, moreover, a good logician, and possessing a retentive memory, his conversation was invariably instructive and entertaining; always greatly appreciated by the limited circle of friends to whom he chiefly confined himself in his later years. But there is little doubt that this comparative isolation had a more injurious effect on his sensitive and nervous temperament than he was aware of; thus tending to hasten his death, which occurred on the 23rd ult., at the age of sixty-three, and in the house where he had lived for nearly twenty-five years. J. Drayton Wyatt.

CASE UNDER THE BUILDING ACT.

At Worship-street Police-court, on the 22nd ult., before Mr. Hannay, Mr. W. H. Middleton was summoned by Mr. Frederick Meeson, District Surveyor for East Hackney (North) for 159*l.* 1*s.* 4*d.*, for expenses incurred under the 47th section of the Metropolitan Building Act 1855, in rebuilding walls of less than the minimum thickness allowed, and in raising stories of less than the minimum height, of a block of five houses at the corner of Castlewood and Mountfield roads, Craven-park, Stamford-hill.

The works were carried on in December and January last, at which time the defendant was owner; but he became bankrupt in January, shortly after the completion of the works. An account of the expenses named was served on him in June last.

The magistrate considered the defendant was not liable, as he, being then a bankrupt, could not be said to be in receipt of the rents or profits when the account was served on him. Summons dismissed.

BUILDING BY-LAWS.

BUILDINGS FOR RAILWAY PURPOSES.

At Highgate, Alfred White, builder, of 152, Central-street, St. Luke's, appeared before Mr. Lermitte, Colonel Stedall, and Mr. Homan, to answer two adjourned summonses, taken out by order of the Finchley Local Board of Health, charging him, under that Board's by-laws, with failing to give written notice to the Board of his intention to erect certain buildings on land belonging to the Great Northern Railway Company, adjoining Torrington-park Station, Finchley, and failing to send in complete plans or sections of such buildings; also with erecting the buildings without enclosing them with properly constructed walls. Mr. Stevens, solicitor to the Board, prosecuted; Mr. Dodd, barrister, instructed by the solicitors to the Great Northern Railway Company, defended.

The buildings erected were an office built of wood, and a corrugated iron stable, both used by Messrs. Rickett, Smith, & Co., coal merchants, and, as they were within 30 ft. of adjoining villa premises, Mr. Stevens contended that they came within the provisions of the Board's by-law, and that, not being for the purposes of the railway company, exemption could not be claimed under the 157th section of the Public Health Act. Mr. Dodd contended that, both under the company's private Act and the Public Health Act, the buildings were exempt. They were erected for Messrs. Rickett, Smith, & Co. by the company, but might have to be extended to meet the requirements of other coal merchants, who otherwise might appeal to the Railway Commissioners, or they might have to be removed altogether, to extend the station. He further contended that the by-law must be considered legally "bad" in this case, as it was unreasonable to require wooden or corrugated iron structures to be put together with good mortar. No demise of the land had been made to Messrs. Rickett, Smith, & Co.

The Bench considered that the buildings were exempt, but formally postponed their decision to give Mr. Stevens an opportunity of appealing, if instructed to do so.

PROVINCIAL NEWS.

Weston-super-Mare.—The new Masonic Hall here has just been completed. It is situated at the corner of the Waterloo Boulevard and Longton Grove-road, and has been built from the designs of Messrs. Hans Price & Wooler, architects, of Bristol, in the Late Tudor style. It is built entirely of Bath stone, laid in irregular and narrow courses. At the corner nearest the boulevard is a tower rising to some altitude, and having a projecting embattled and panelled cornice, resting upon bold corbels. Above is a low, half-timbered roof, terminated by a flattish-pitched spire, whose roof is covered in by oak shingles, and surmounted by a gilded copper vane. In sunken quatrefoil panels along the upper part of the façade facing Longton Grove-road are shields bearing various Masonic emblems. The two entrances are moulded and carved, particularly the main one. Over this is a recessed and canopied niche, whereon stands a sculptured figure, in Kenton stone, of the patron saint, St. Kew. This statue is the work of Mr. Harry Hems, of Exeter, by whom also all the carving in stone and wood throughout the building has been done. The lodge-room has an opened timbered roof, ornamented by carved wooden bosses. The hall has been built by Mr. S. Taylor Harvey, of Bristol, within the time allowed by the contract conditions.

Whitfield Court (Herefordshire).—During the past two years and a half very extensive alterations and additions have been in progress at Whitfield Court, the seat of Mr. and Lady Katharine Clive. The work, which has now been completed, has been carried out from the plans and under the superintendence of Mr. Cheiake, architect and county surveyor. In the year 1853 the late Rev. Archer Clive found it requisite to increase the size of Whitfield by the erection of a new entrance-hall, with three bedrooms over, and offices below; and this block of buildings was termed the east wing. This wing has now been raised one story higher, so as to give three more rooms. But the most conspicuous change in the mansion consists of its enlargement by the addition of a new block on the south-west. The principal room in this new portion is a drawing-room, measuring 44 ft. long by 24 ft. 6 in. wide, with a height of 22 ft. in the clear, in addition to a large octagonal bay window. The space over this apartment is divided into three or four rooms. The walls of this block are 3 ft. thick, faced with stone from the estate, worked in their courses, and lined with brick inside, so as to guard against damp or uneven temperature. The approach from the library to the drawing-room is through a secret book door, and behind a triple arcade, opening immediately into the drawing-room. This arcade consists of three arches, resting upon twisted columns with caps and bases, the latter being supported by a carved plinth. Two of the arches have a moulded transome, separating them from the arcading below, whilst underneath the transome are some old Italian cut velvet hangings, to screen the library door from the drawing-room. There is also an entrance from the first landing of the principal staircase to the drawing-room through a richly-carved door, which Mr. Clive purchased in Florence. This door was sent to Whitfield, and designs made for having it encased in jambs to match, including a pierced tympanum. This portion of the work, as well as the book-shelves and the arcade from the library, was executed by Signor Borrani Piazza, Santa Maria Novella, Florence. It is worked in Italian walnut, polished, with the mouldings relieved by gold. The floor of the drawing-room is of the parquetry pattern, and was constructed in Venice and sent to England in pieces of about 2 ft. by 2 ft. All the rest of the woodwork is teak, with the exception of the massive chimney-piece, which is constructed in wainscot oak. A new staircase in wainscot oak is one of the principal features of the new work. A large reservoir, capable of containing 25,000 gallons of water, has been constructed on what is known as the Sheep Walk, and is intended to furnish a supply of water to the house, and will also enable the mansion to be flooded in case of fire. Hydrants are fixed at intervals round the house, and internally, at the most exposed parts on each floor, large service-pipes with taps and hose are placed. The whole of the water-supply arrangements have been carried out by Messrs. Easton & Anderson, of London, whilst Messrs. Rosser & Russell, of 22, Charing-cross, London, have furnished the structural arrangements for heating, and hot-water supply to housemaids' closets, baths, &c. Mr. James Bowers, of Hereford, has been the contractor for the whole of the works. The carving was entrusted to Mr. Robert Clarke, of Hereford, and the bell-hanging, gun-metal casements, and other works of this kind, were executed by Mr. W. Letharen, of Cheltenham.

HYDRAULIC DIFFICULTIES.

Sir,—Will some of your correspondents kindly help me out of a dilemma? Some time since I bought a house, with the intention of extending it backwards, and by excavating the basement and underpinning the walls to get 8-ft. headway in the basement-floor (there were only 6 ft. originally); but in making the extension we had to build over a well, and the water in this well rises to within 7 ft. of the ceiling, so by the time the dwarf walls, joists, and flooring are down there will be barely 6 ft. between the floor and ceiling. I must state I have an architect and builder, who advised me to have the well concreted. I accordingly had the well cleared out to the bottom, a few stones placed there, and a pump inserted, to keep it dry, to give the concrete time to set. The latter was made of one part Portland cement, one part Plympton sand, and one part limestone chippings, well stamped down, with a cavity in the sides of the wall, 9 in. back, to allow the concrete to have a hold. We then saw the water coming up from the hole where the pump was inserted. After thirty-six hours we withdrew the pump, and put clay in the hole, then Portland cement and sand mixed; but in less than fifteen minutes the water was up between the concrete and stiffet, or soft rock, and the water is up now to its original level. I must state the basement-floor is about level with the main drain,—perhaps a little below it,—so that it is impossible to carry it into the drains. My architect and builder seem to be at their wits' end, and I appeal to you.

Greenhorn.

Leominster.—A Wesleyan chapel at Steen's Bridge, Leominster, has been opened, the "architect and builder" being, we are told by a Hereford paper, Mr. Hine, of Ludlow.

CHURCH-BUILDING NEWS.

Dearham.—A bazaar has been held at Maryport to raise funds for the restoration of the ancient parish church of Dearham. The work is to be entrusted to Messrs. Cory & Ferguson. It appears that the church has been in tolerably good condition up to 1847, but in that year, owing to the working of a mine in the vicinity of the church, the building began to crack in various places, and the lintels were broken. Mr. Charles Ferguson, in his report on the condition of the church, says,—"The interior of the church is in a deplorable condition. The floor is damp and much decayed; the seats are rotten; the plaster is much injured by damp; and the principal lintel at one of the windows has entirely decayed and fallen out of the wall, leaving the wall above it unsupported except by the mortar." The cost, including provision for increased accommodation, is estimated at 1,750*l.*

Battersea.—On the 10th ult., the Bishop of Rochester dedicated the newly-erected Church of St. Michael, Battersea. The building is situated in Bolingbroke-grove, Wandsworth-common, and is constructed of red and yellow brick, with a timber roof covered with red tiles. It consists of a nave, chancel, and two colonnades, the latter separated from the nave by arcades having octagonal columns of marble, surmounted by Portland stone capitals. The floor is of wooden blocks, and the pews are of the low doorless pattern. It will accommodate about 750 persons, and its total cost will be about 4,500*l.*, of which all but 800*l.* has been contributed by the relatives and friends of the late Rev. H. B. Verdon and Mr. Philip Cazenove, to whose memory the church is erected. Mr. W. White, F.S.A., is the architect, and Mr. J. D. Hobson was the builder.

Sidbury.—Holy Trinity Church, Sidbury, near Bridgnorth, has been re-opened, after restoration, which has been carried out under the direction and to the drawings and specifications prepared by Mr. R. Griffiths, architect, Stafford. The general fabric was found to be in a very dilapidated condition, the whole of the roof having been stripped, and the mortar removed from all the exterior walls. The stone work has been repaired, and partly rebuilt in herring-bone to correspond with the old work. The old timbers in the roof (where required) have been removed, and the space between the rafters plastered and left visible, including the bold oak principals. The roofs are covered with tiles obtained from the Billingsley brickyard. The chancel has a pitch-pine boarded ceiling, formed in panels with moulded ribs. The old porch has been taken down, and a new one built to correspond with the other portion of the work. The stone for the masonry and walling, raised near the church, is the gift of Mr. C. R. E. Cresswell, Sidbury Hall. A new window has been added to the north side of the nave, and the whole of the jambs to the doors and windows thoroughly cleaned down. An entirely new chancel arch has been added. The old stone paving has been removed, and the aisle and chancel paved with Messrs. Maw & Co.'s encaustic tiles. The whole of the seating in the chancel and nave is in pitch-pine, with moulded bench-ends. The pulpit and reading-desk have been reconstructed with the old oak framing, with carved panel fronts. The ancient font has been restored and cleaned. The windows have been re-glazed with cathedral glass by Mr. John Davies, of Shrewsbury. The whole of the work has been carried out by Messrs. Nevett Brothers, contractors, Ironbridge.

Mathern.—Mathern Church, near Chepstow, remarkable as the burial-place of Theodrick, or Teudrick, the hermit-king of Glamorgan, is now undergoing a thorough restoration, and the following interesting information has been furnished by Mr. William White, of Abergavenny, the contractor for the work:—Upon an examination being made of the south wall of the chancel, it was found that the heavy timbers of the roof had thrust the wall 9 in. out of the perpendicular. It was then decided to put the wall back to its former position without taking it down. To accomplish this a strong barrier was erected inside, perfectly upright, and close to the base of the wall. A groove was then cut on the inside at the base, wedge shape, the whole thickness of the wall, and with a little pressure from the outside with screw-jacks, the wall gradually recovered its perpendicular, without the displacement of a single stone; the groove was then underpinned, and the barrier removed. Upon excavating at the base of this wall, under the tablet of King Theodrick, a stone coffin was found, partly filled with dry mould and some bones (supposed to be those of the king). The stone coffin was removed to a place of safety for re-interment. Its dimensions are 5 ft. 7 in. long, exterior, and 5 ft. 3½ in. interior; its width is 20 in. exterior, and 16 in. interior; the depth, 11 in. exterior, and 6 in. interior.

Salhouse.—The restoration of the somewhat singular church of Salhouse is progressing, and (according to the *Norwich Argus*) the building will be re-opened in November. Salhouse is some five miles north of Norwich. Its parish church, dedicated to All Saints, is a plain old building, consisting on plan of chancel, nave, north aisle, and tower. This tower has little affinity with the rest of the church. The late Sir G. Gilbert Scott, R.A., was of opinion that when it was built it was intended to considerably enlarge the church, and he based this opinion upon the fact that the tower in question did not stand in the centre of the nave line, but was centered with the south wall of the nave upon the one hand, and the north wall of the north aisle on the other. By this treatment, he thought, the old men intended to raise the latter wall to the height of the former, construct one roof over the whole, and probably add a north and south aisle. The buttresses that flank each side of the tower quite support this theory. The scheme was never carried out, however; after building some 60 ft. high, and ere the natural terminations of the angle buttresses were reached, a temporary roof was put on, and thus it remained. In the present restoration nearly all the south wall of the nave has been rebuilt in rubble work as before, the old roof of the tower has been removed and recovered, and the steps leading to the tower repaired. The nave roof has been stripped of its thatch, and a strong one of English oak has been erected. This is covered by a layer of reeds to a thickness of about 15 in. A south porch has been added,—the walls being of Trapp flint and the dressings of Ancaster stone. Over the entrance is a richly-carved niche, and the apex of the gable is crowned by a foliated cross in stone. There are three new two-light windows in the south aisle, and one has been put in the chancel. The old remaining bits of ancient stained glass have all been carefully preserved and re-used. The stone carving has been executed by Mr. Harry Hems, of Exeter; the builder is Mr. George Dobson, of Colchester, his general foreman being Mr. George Stow. The works are being carried out from the designs and under the immediate superintendence of Mr. John Oldrid Scott, architect, Spring-gardens, London. The estimated cost of the restoration is 3,500*l.*, but further works are contemplated. The old carved oak screen especially should be cared for.

Bistre.—On the 20th ult. the parish church at Bistre was re-opened, after restoration. The vicar (the Rev. J. N. Evans) found on entering upon his work that the building was in a very unsatisfactory state, and he determined to effect its restoration. The amount required for the restoration was 700*l.*, and the greater part of this sum having been raised, designs were called for, those of Mr. Spaull, of Oswestry, being eventually accepted. The work, which was placed in the hands of Mr. J. Williams, builder, of Buckley, was commenced in May last. The gallery at the west end has been removed, as well as the whole of the interior fittings of the church. The apse at the east end has been raised and ceiled with wood, and the east window, which previously was level with the communion-table, has been raised and filled with stained glass by Messrs. Ballantyne, the subject being our Lord in the garden of Gethsemane. This window is the gift of the Pemberton family of Plas Issa. The last bay at the east end of the church has been raised two steps and rearranged. The choir, reading-desk, and vestry are at the south side of the transept, while the organ is on the north. The body of the church has been filled with open seats, capable of accommodating 400 worshippers; while the aisles have been laid with tiles, and the choir and sacrarium with encaustic tiles from the Pen-y-bont works of Mr. J. C. Edwards.

Waterworks, Milton-next-Sittingbourne.—The works for the water supply of this place have been completed, and were formally opened on the 27th ult. They have been carried out by Mr. Henry Robinson, C.E., of Westminster; the contractor being Mr. George Torkington.

DISSENTING CHURCH-BUILDING NEWS.

Birkenhead.—The Unitarian Church, Charing-cross, Birkenhead, was re-opened on the 4th ult. after various alterations. A new chancel 17 ft. 6 in. by 12 ft. has been added, with organ-chamber and vestry attached, and having a window filled in with stained glass, the subject being "A Vision of St. Luis on the Shores of Palestine." New glass has been put in all the old windows, and the whole church has been refurnished and decorated. The lecture-hall below has been nearly doubled in size, and cloak-rooms and conveniences added. The whole work, which has been executed by the following contractors, has cost about 1,850*l.* The general contractors for the works were Messrs. Legge & Co. The stained-glass window, ornamental tiling to reredos, and all the decorative work, were by Messrs. Shrigley & Hunt, of Lancaster and London. Mr. Rogerson, of Liverpool, was the sculptor of the reredos; the gas-standards are by Willis & Co.; and the floor-tiling by Craven, Dunnill, & Co. The whole has been carried out under the direction of Mr. James N. Crofts, architect, Liverpool.

North Hykeham (Lincolnshire).—The foundation stones of a Wesleyan chapel and schools have been laid here. The designs of the building were prepared for the builder by Mr. W. Mortimer, architect, Lincoln. It will cost 500*l.*, and will seat 200 people.

Walsall.—A new Presbyterian church is in course of erection here. The church, with schools, vestry, and, other accommodation for congregational purposes, is situated at the junction of Hatherton-street and Darwall-street. The church is planned with the principal gable fronting Hatherton-street, and in this will be placed the main entrance. At the angle of the front next to Lichfield-street will be placed a tower 14 ft. square at the base. The lower story will contain the gallery entrance and stone staircase, and above this will be the bell-chamber. The upper part of the tower, exteriorly, will be gabled and pinnacled, and surmounted by an octagonal spire, rising to a total height of about 100 ft. from the ground to the top of the finial. The side elevations of the church to Darwall and Lichfield streets show each four stone traceried windows, two of two-lights and two of three-lights, the latter of which will be carried up to form gablets. The interior of the church will be divided into quasi-nave and aisles by the introduction of a light arcading of timber supported on iron columns. This has been rendered necessary by the adoption of a wide span roof, consequent upon the proportions of the site. The internal dimensions of the church are:—Length, 63 ft. 6 in.; breadth, 45 ft. 9 in.; height, from floor to ceiling in centre, 38 ft. Sitting accommodation will be provided on the ground-floor for over 400 adults; and, including the additional sittings in the gallery over the main entrance, the building is computed to accommodate about 500 persons. The school buildings will be placed at the rear of the church, with the end gable fronting Darwall-street. They will comprise a large room, 32 ft. 6 in. by 24 ft. wide, and four class-rooms, varying in size from 12 ft. by 7 ft. 6 in. to 15 ft. 6 in. by 11 ft. 6 in., thus securing a total accommodation for upwards of 200 children. It is proposed to warm the whole of the buildings by hot air, and this portion of the contract has been entrusted to Messrs. Haden, of Trowbridge. The buildings have been designed in the Gothic style, of the early fourteenth-century period, and are to be constructed of bricks, faced on the fronts with best local pressed bricks. The jambs, moulds, plinths, and strings are also of brick; and the window tracery, sills, mullions, copings, &c., are to be of Bath, Penkridge, and Codsall stone. Interiorly, the church is to be lined with pressed red bricks up to the height of the window sills, thus giving a deep base or dado of colour. Above this the lining is to be of pressed buff bricks, tuck-pointed with red mortar, which it is believed will produce a very clean and cheerful effect in the internal appearance. The interior of the schools is to be lined with brick, neatly pointed, and coloured and painted in approved tints. The woodwork throughout is to be of the best Baltic fir, and the internal fittings are to be stained and varnished. The contract for the various works has been taken by Messrs. William Trow & Sons, of Wednesbury, and they are now proceeding with the buildings, from the plans and under the superintendence of Messrs. John Cotton & H. H. McConnal, architects, of Birmingham and

Walsall, whose joint designs were selected some three years ago. The cost of the buildings, including lighting, warming, and furnishing, is estimated at about 3,000*l.*

STAINED GLASS.

Chelmsford.—A window has been placed in St. Mary's Church as a memorial of the late Miss Ann Baker. Messrs. Clayton & Bell have supplied the window, which is of two lights, and illustrates the texts, "I was an hungered, and ye gave me meat," and "I was sick and ye visited me."

Shoeburyness.—A memorial window has just been placed in the parish church of St. Andrew's, Shoeburyness. The glass is from the firm of Messrs. Cox, Sons, Buckley, & Co., of Southampton-street, Strand, and the window is put up to the memory of Major Lambert, late of the Royal Engineers. The window illustrates passages in the "Pilgrim's Progress," and is intended to represent the Christian pilgrimage.

Dewsbury.—The large south transept window of St. Mark's Church has just been filled with painted glass "in loving memory of (the late) Williamson Metcalfe, of Elmwood House." The window has four chief openings. Each is divided into two compartments by bordures and panels of rich ornament, thus allowing the introduction of eight figure subjects. The groups are richly coloured on a diapered ruby background. The intervening and inframing spaces of ornament are kept chiefly in white and dull blue, with here and there a little golden stain. The widow is the donor of the window, and Messrs. Powell Bros., Leeds, executed it.

VARIORUM.

Bicket's Provincial Builders' Price-Book and Surveyors' Guide (E. & F. N. Spon) is issued on the ground that existing Price-Books are London books, and not applicable to the provinces. If all provincial towns adopted the same system of measuring and the same prices, there would be greater force in this observation than, as it seems to us, there is. The Liverpool Building Act is appended, and the Manchester By-laws, and the book will doubtless be found useful by many. We are bound to say, nevertheless, that we would rather see endeavours made to bring about more general uniformity than to confirm existing divergences. Comparing prices with those given by "Laxton," considerable differences in various items, the provincial being lowest, are found; as to day-work, however, ½d. per hour less is all the difference stated,—10d. per hour, that is, instead of 10½d. —— The October number of the *Antiquary*, a very good one, commences with a short "Study on Poet's Corner, Westminster Abbey," by Henry Poole, Master Mason of the Abbey. The Rev. H. N. Ellacombe contributes the first portion of an elaborate paper on "Shakspeare as an Angler."——"Gleanings from Popular Authors, Grave and Gay," of which part I. comes to us from the ever-active Cassell, Petter, & Co., is intended not alone as a half-hour book, in which will be found some of the best sayings of the best authors, but as a treasury of pieces suitable for reading in public. The illustrations are effective.

Miscellanea.

The Orphan Asylum Building at Clapton.—We are informed that this large and substantially-built structure, erected in 1823, and abandoned a few years since by the removal of the inmates to the new asylum at Watford, is likely to be taken for the purpose of a training home or homes for the young men and women "cadets" of the "Salvation Army." The once beautiful wooded lawn and garden in front and rear of the Asylum were recently parcelled out into building lots, and streets of houses have been erected thereon, and a number of them are at present occupied.

Statue of the Late Mr. George Dawson.—A statue of the late Mr. George Dawson has been unveiled at Birmingham. The statue, which is of white Sicilian marble, is 6 ft. 6 in. in height, and the late Mr. Dawson is represented in a standing attitude, in the act of addressing an assembly, with his right hand crossed on his left. On the four sides of the canopy there will be four medallions of Sicilian marble, consisting of the heads of Shakspeare, Carlyle, Bunyan, and Oliver Cromwell. The work has been executed by Mr. Woolner, R.A.

Proposed Boulevard round London.—The prospectus has been issued of a "pioneer company" to be formed privately for the purpose of providing funds to obtain the necessary Parliamentary powers to make a boulevard round London, the work to be carried out by a public company to be formed when the necessary powers to execute it have been secured. The proposal emanates from Mr. E. L. Paraire, architect, and if carried out will, according to the prospectus, comprise a broad and continuous roadway about twenty-five miles in length, with wide footpaths on each side, planted with trees. Powers will be taken to lay down tramways so soon as roads of sufficient length to be remunerative are constructed. The boulevard will be made in sections, and will traverse the whole of the suburban districts of the metropolis, at an average distance from St. Paul's of about five miles on the east, and four miles on the north and south. Commencing on the north side of the Thames at Cubitt Town, it will pass by Poplar, Clapton, Hampstead, Kensal New Town, to Hammersmith, where it will be joined by one of the bridges over the river, thence to New Brompton (?), Clapham, Peckham, and Greenwich. The greater part of the land required is now free from buildings, and said to be available for the proposed work. The sum to be obtained for the frontages to the boulevard will, it is believed, cover the outlay required for the construction of the works. It is estimated that the ultimate expenditure will amount to 2,500,000*l.* Roughly speaking, the boulevard, as shown on the plan sent to us, will enclose the metropolis in an irregularly shaped oval. The east end of this oval, we notice, is marked on the plan "not surveyed," and it is here that apparently serious obstacles present themselves. On the south side of the Thames Greenwich Park seems to be in the line of the proposed boulevard, and on the north side, the docks at Blackwall appear to offer an obstruction. Is it proposed, as part of the scheme, to erect a bridge across the river at Greenwich? Nothing is said about such a bridge in the prospectus. Mr. Paraire has for many years been considering the subject.

Fire-Extinguishing Apparatus at the New Savoy Theatre.—In a previous issue we mentioned that Messrs. Merryweather & Sons, of Long-acre, had fitted the new Savoy Theatre with fire-extinguishing appliances, and we think it may interest our readers to know that the apparatus differs from any previously fitted inside private buildings in the fact that the hydrants are of an improved form, having a thread which is known as the new Metropolitan Brigade Gauge, and which enables the hose to be more rapidly connected or disconnected with an impossibility of the threads becoming "fouled." The hose is of canvas, tanned, and rubber lined, so as to render it waterproof, and the couplings and nozzle-pipes are also of the new-pattern round coarse thread.

Cheap Cottage Building.—Mr. Villiers Stuart, M.P., in a letter to the Lord Mayor of Dublin, proposes to offer a prize of 50*l.* for the model of the best labourer's cottage, the construction of which should not exceed 52*l.* 10*s.*, which would enable it to be let at 1*s.* per week. Mr. Stuart suggests the model should be arranged in the forthcoming exhibition of Irish industries side by side with the one which Mr. Johnson, of Kanturk, secretary to the Labour League, proposes to send of a Limerick labourer's cabin of the present time, "thus placing in instructive contrast what Irish workmen's dwellings so often are and what they might be."

Tenders at Croydon.—Complaints are made that the Guardians of Croydon Union, after inviting tenders for painting the outside of the workhouse, have given the work to the tradesman they have been in the habit of employing, although the tender of an equally competent person was much lower.

The Annual Dinner of the Builders' Benevolent Institution is announced to take place on Thursday, November 3rd, when the President, Mr. ex-Sheriff Burt, of the firm of John Mowlem & Co., will, we trust, be supported by a large number of the friends of the Institution.

New Southport Market.—The revolving shutters mentioned in our account of this building were supplied and fixed by Clark, Bunnett, & Co. (Limited), who have also received instructions from the Corporation of Oxford to fix their patent noiseless steel shutters to the extension of their city markets.

Chemical Fire Engines.—A practical demonstration of the powers of Dick's chemical fire-engines to arrest fires in their early stages was given last week, the experiments being made by permission of the City Lands Committee on vacant ground near the Thames Embankment. Mr. James Sinclair, of Leadenhall-street, in explaining the trial to which the engines would be put, remarked upon the importance of dealing with a fire before it had got hold of a building. The extincteur "Fire Queen," with which an experiment was first to be made, was filled with an innocuous chemical containing a large porportion of carbonic acid in its composition. At the top of the extincteur and within was a bottle of sulphuric acid, and in order to put the engine in readiness to extinguish a fire it was only necessary, by giving a smart tap on a rod, to break the bottle of sulphuric acid. As soon as this was done carbonic acid was set free from the chemical liquid, and a cock being turned the pressure of the carbonic acid gas formed within the extincteur forced the water out in a strong jet, the water carrying with it a large quantity of carbonic acid. The effect of the carbonic acid on a fire would be seen by the almost instantaneous extinguishing of the burning combustibles that were to be experimented upon. A large pool of tar and petroleum was first set on fire, and the flames put it out in sixteen seconds. The experiment was repeated and the fire extinguished in ten seconds from the time the stream from an extincteur was directed upon it. Other experiments, equally satisfactory, followed.

Pictures for Birmingham.—Mr. Joseph Nettlefold, managing director of the well-known firm of Nettlefolds (Limited), has announced in a letter to the Mayor his intention of bequeathing to the town of Birmingham, for exhibition in the new local art gallery, his valuable collection of oil paintings by David Cox. The paintings, which are twenty-five in number, comprise several of the painter's most admired works, including the "Skirts of the Forest," "Waiting for the Ferry," "The Hayfield," "Change of Pasture," "Rhyl Sands," &c., and are of the estimated value of from 25,000*l.* to 30,000*l.* Among the conditions accompanying the gift will be these:—"That the pictures from the time they are delivered be open for exhibition to the public free of all charge on every day in each year, and not closed earlier than 8 p.m., except for a period not exceeding fourteen consecutive days in each year, when the gallery may be closed for cleaning." "That the room in which these pictures shall be exhibited be lighted in the evenings by the electric light." The offer has been gratefully accepted.

Architecture: University College, London.—Under Professor T. Roger Smith, three courses of evening lectures will be given this session at the College, Gower-street. The subjects treated remain substantially the same as in previous sessions, but such alterations will be made in the mode of dealing with them as, in the opinion of the Professor, may render the lectures useful to students preparing for the Associates' Examination at the Royal Institute of British Architects, or the District Surveyors' Examination, as well as to pupils and other students of architecture; and a public introductory lecture, explanatory of the course and with suggestions as to modes of study, will be given at the College, by Professor Roger Smith, on Monday next, 10th October, at six p.m., admission free. Architects and students of architecture are particularly invited to attend. The full syllabus can be obtained on application to the assistant-secretary at the College.

The Mersey Tunnel.—On the recommendation of the works committee, the Mersey Docks and Harbour Board have assented to a proposal of the Mersey Railway Company to sink a second shaft on the Birkenhead side of the river, so that the works of the proposed headway and main tunnel may be proceeded with simultaneously.

Messrs. S. Owens & Co., of Whitefriars-street, have issued a new section (No. 1) of their Illustrated Catalogue, containing prices of pumping machinery of every description for steam, water, or wind power, self-acting hydraulic rams, &c. It will be found useful.

A Fenman writes, with reference to Mr. G. Hamit's machine for cutting water-weeds, noticed in our last week's impression, page 420, that it is not for "roading," but for "roding." In fen language, *to rode* is to remove weeds from watercourses.

TENDERS

For the erection of new Baptist Church, Handsworth, near Birmingham. Mr. John P. Osborne, architect:—

Moffat	£7,027 0 0
Garlick	6,950 0 0
Barnsley & Son	6,750 0 0
Horsman & Co.	6,490 0 0
Wilson & Son	6,471 0 0
Bennett	6,442 0 0
Webb	6,390 0 0
B. N. Smith	6,250 0 0
Elvins	6,250 0 0
Parton	6,090 0 0
Bloore	6,000 0 0
Sapcote & Sons	5,865 0 0
Horsley Bros.	5,829 0 0
Barker & Son	5,773 0 0
Jeffery & Son	5,600 0 0
Millward's executors (too late).	

For covering and otherwise improving the Waterworks service reservoir, for the Wigton Local Board, Cumberland. Mr. John S. Hodgson, engineer. Quantities supplied:—

Greenwood	£491 12 0
Darlington	399 9 2
Seward	353 11 0
Moore (accepted)	353 2 3

For alterations and additions to residence near Croydon. Messrs. Bernay & Monday, architects:—

Legg	£983 0 0
Coles	959 0 0
Smith	863 0 0

For new road at Stoke Newington, for the Incorporated Society of Licensed Victuallers. Mr. H. J. Newton, architect:—

Palmer	£482 0 0
Killingback	475 0 0
Wood (accepted)	470 0 0

For warming and ventilating by their new hydrocaloric apparatus the dwelling-house and billiard-room, Villa Hermosa, Arcachon, France, for Mr. W. Laird McGregor:—

J. Weeks & Co., Chelsea	£180 0 0

For sewers and roads on the west side of Sir Spencer Wilson's estate, Hampstead. Messrs. Farebrother, Ellis, Clark, & Co, surveyors:—

Anderson	£4,672 0 0
Wilson	4,499 0 0
Maxwell	4,434 0 0
A. & F. Culverhouse	4,200 0 0
Nowell & Robson	4,018 0 0
Watts	3,752 0 0
Killingback	3,195 0 0

For alterations and additions to Point House, Blackheath, to adapt it to the purposes of the West Kent and Greenwich Carlton Club. Mr. A. L. Guy, architect:—

J. & T. Greenwood, Arthur-street West, E.C.	£1,495 0 0
Disney, Blackheath	1,488 0 0
Merritt & Ashby, London-wall	1,436 0 0
Hatfield, Blackheath	1,350 0 0
Higgs & Hill, South Lambeth	1,343 0 0
E. Banks, Lewisham (accepted)	1,345 0 0

For new Mission Church, Algernon-road, Lewisham:—

Colls & Sons	£3,678 0 0
Holland & Hannen	3,611 0 0
Jerrard	3,571 0 0
Goddard & Sons	3,563 0 0
Blake	3,555 0 0
Perry & Co.	3,485 0 0
Patman & Fotheringham	3,375 0 0
Havell	3,320 0 0

For villa residence, Orbel-road, Surrey-lane, Battersea. Mr. C. F. Fenton, architect:—

F. Warr, Neville-road, Croydon	£566 0 0
T. Beauchamp, Brentford End	554 0 0
R. P. Barnes, Bedford Park, Chiswick	547 0 0
T. Hiscock, High-street, Hounslow	491 0 0
R. Squelch, Hurmur-road, Egham	427 0 0
W. B. Prentice, Devonport-road, Shepherd's-bush (accepted)	390 0 0

For additions and alterations to Collingwood Park, Camberley, for Colonel Lampriere. Messrs. Harrison & Cooper, architects:—

Martin Wells & Co., Aldershot	£1,205 0 0
William Watson, Ascot Heath	1,183 0 0

For alterations and additions to 5, Wimpole-street and Harley-mews. Mr. A. E. Hughes, architect. No quantities supplied:—

McLachlan & Sons	£2,770 0 0
Simpson & Sons	2,620 0 0
Williams & Sons	2,515 0 0
Downs	2,217 0 0

For repairs, &c., to 27 and 27A, Sackville-street. Mr. Wimperis, architect. Quantities supplied:—

Curtis	£1,218 0 0
Patrick & Sons	1,215 0 0
Scrivener & Co.	1,199 0 0
Fish	1,174 0 0
McLachlan & Sons	1,124 0 0
Langmead & Way	1,067 0 0
Hatfield & Sons	960 0 0

For lowering, widening, sewering, metalling, &c., a portion of Shepherd's-hill-road, for the Hornsey Local Board. Mr. F. de Courcy Meade, surveyor:—

Walker, Upper Holloway	£2,879 0 0!
Josh. F. Meston	1,450 0 0
Pizzey	1,397 0 0
Dunmore	1,389 0 0
McKenzie, Williams, & Co.	1,338 0 0
Strachan & Co.	1,259 19 4
Thomas Rowley	1,220 0 0
Randell & McDowell (accepted)	1160 0 0!

For repairs of sea walls and construction of groynes and outfalls for the Commissioners of the Level of Tendring, Essex. Mr. Wm. Berrell, engineer. Quantities supplied by Messrs. R. L. Curtis & Sons:—

Hill & Co., Gosport	£9,632 0 0
J. Botterill, Cannon-street	8,169 0 0
C. Chamberlain, Littlehampton	7,073 0 0
Barnes & Co., Crayford	6,924 0 0
E. Harrison, Peckham	6,350 0 0
R. Tyler, Kensington	5,893 0 0
Saunders & Son, Deedham	5,830 0 0
A. F. James, Hythe	5,801 0 0
G. Hunter, St. Peter's Park	5,678 0 0
J. Moran, Harwich	5,643 0 0
R. Walker, Lynn (accepted)	5,132 0 0

For enlargement and repairs to Hawkwood, Chingford, Essex. Mr. F. Boreham, architect:—

Morter (accepted)	£1,547 0 0

TO CORRESPONDENTS.

Churches of Buckinghamshire.—The writer of the letter on this subject in our last says, "By an oversight I left out the words 'of Northamptonshire' before Raunds and Higham Ferrers."

F. C. (already noticed).—H. M. (next week).—Z. (received).—H. J. N.—G.—B. B.—Dr. P.—S. S.—E. L. P.—H. & Co.—J. McL.—W. E. M.—J. S.—A. W. H.—W. P. B.—B. E. F.—J. T.—G. T. C.—D W.—C. F. H.—J. L.—J. B.—C. F. F.—C. B. & Co.—E. Van P.—J. H. R.—B. R.—W. E. H.—P. Bros.—T. L. W.—C. C. H.—J. D. W.—W. W. L.—J. S.—H. H.—A. W. B.—*Re* Dr. W.—M. & Co.—A. L G

All statements of facts, lists of tenders, &c. must be accompanied by the name and address of the sender, not necessarily for publication.

We are compelled to decline pointing out books and giving addresses.

Note.—The responsibility of signed articles, and papers read at public meetings, rests, of course, with the authors.

CHARGES FOR ADVERTISEMENTS.

SITUATIONS VACANT, PARTNERSHIPS, APPRENTICESHIPS TRADE, AND GENERAL ADVERTISEMENTS.

Six lines (about fifty words) or under ..... 4s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

Terms for series of Trade Advertisements, also for Special Advertisements on front page, Competitions, Contracts, Sales by Auction, &c. may be obtained on application to the Publisher.

SITUATIONS WANTED.

FOUR Lines (about THIRTY words) or under ..... 2s. 6d.
Each additional line (about ten words) ..... 0s. 6d.

REPLIES TO ADVERTISEMENTS,

Addressed Box ——, Office of "The Builder,"

Cannot be forwarded, but must in all cases be called for, and the Office Receipt produced.

THE CHARGE FOR A BOX IS AS UNDER:—

For "Situations Wanted" Advertisements ..... 3d. per Week.
For all other Advertisements ..... 6d. per Week

PREPAYMENT IS ABSOLUTELY NECESSARY.

"*" Stamps must not be sent, but all small sums should be remitted by Cash in Registered Letter or by Money Order, payable at the Post-office, King-street, Covent-garden, W.C. to

DOUGLAS FOURDRINIER, Publisher,
Addressed to No. 46, Catherine-street, W.C.

Advertisements for the current week's issue must reach the office before THREE o'clock p.m. on THURSDAY.

The Publisher cannot be responsible for DRAWINGS, TESTIMONIALS, &c. left at the Office in reply to Advertisements, and strongly recommends that of the latter COPIES ONLY should be sent.

TERMS OF SUBSCRIPTION.

"THE BUILDER" is supplied *direct* from the Office to residents in any part of the United Kingdom at the rate of 18s. per annum, *prepaid*. Remittances payable to DOUGLAS FOURDRINIER, Publisher, 46, Catherine-street, W.C.

Best Bath Stone.
WESTWOOD GROUND,
Box Ground, Combe Down,
Coraham Down,
And Farleigh Down.
RANDELL, SAUNDERS, & CO., Limited,
Coraham, Wilts. [Advt.

Box Ground Stone
Is the best for use in all exposed positions, being a well-known and tried weather stone.
50,000 feet cube in stock.
PICTOR & SONS,
Box, Wilts. [Advt.

Doulting Freestone and Ham Hill Stone of best quality, in blocks, or prepared ready for fixing. An inspection of the Doulting Quarries is respectfully solicited; and Architects and others are CAUTIONED against inferior stone. Prices, delivered to any part of the United Kingdom, given on application to CHARLES TRASK, Norton-sub-Hamdon, Ilminster, Somerset. — Agent, Mr. E. WILLIAMS, 73, Charlotte-street, Portland-place, W. [Advt.

Doulting Stone and Ham Hill Stone, of best quality. Prices and Estimates, including delivery to any Station, on application to STAPLE & HANN, Quarrymen, Stoke-sub-Hamden, Ilminster. Agent, E. CRICKMAY, No. 4, Agar-street, London, W.C. [Advt.

Asphalte.
Seyssel, Patent Metallic Lava, and White Asphaltes.
M. STODART & CO.
Office:
No. 90, Cannon-street, E.C. [Advt.

Asphalte.—The Seyssel and Metallic Lava Asphalte Company (Mr. H. Glenn), Office, 38, Poultry, E.C.—The best and cheapest materials for damp courses, railway arches, warehouse floors, flat roofs, stables, cow-sheds and milk-rooms, granaries, tun-rooms, and terraces. [Advt.

Immense quantities of
DRY WAINSCOT,
DRY MAHOGANY,
DRY WALNUT,
in all thicknesses.
B. J. HUDSON & SONS,
Whitfield-st., W., and Great Peter-st., S.W., London. [Advt.

MICHELMORE & REAP,
Manufacturers of
CHARLES COLLINGE'S PATENT
COLLINGE'S PATENT HINGES, LEVER, SCREW, & BARREL BOLTS,
Self-Acting "FALL DOWN" GATE STOPS,
and IMPROVED GATE FITTINGS of every Description.
36A, BOROUGH ROAD,
LONDON, S.E.
Discount to Builders.
Illustrated List two stamps.

ZINC ROOFING
FIXED COMPLETE.
F. BRABY & CO.,
ESTABLISHED 1837,
THE MANUFACTURING AGENTS OF THE VIEILLE MONTAGNE CO.
PATENT SOLID UNSOLDERED RIDGE PLATES, FOR ITALIAN OR SQUARE ROLL CAP ZINC ROOFING.
By the adoption of this Method the use of Solder is Entirely Dispensed with, and consequently the Danger incurred by the use of Fire-pots is Avoided. The Cost is Lessened and the Durability Increased. Estimates for Zinc Dormers, Flats, &c.
FITZROY WORKS, 356 TO 360, EUSTON ROAD, LONDON.
ALSO AT DEPTFORD, LIVERPOOL, GLASGOW, and CYPRUS.
Architects, Engineers, and Contractors Supplied with Drawings and Estimates Free of Charge.